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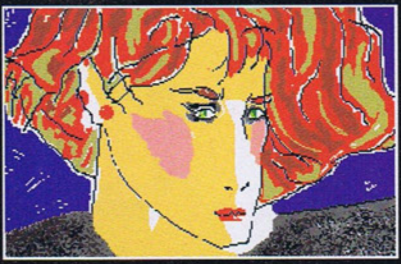
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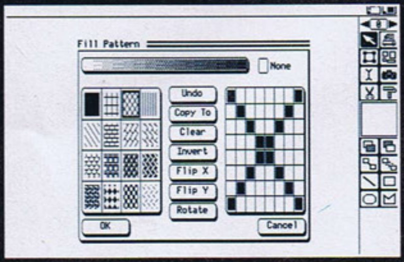
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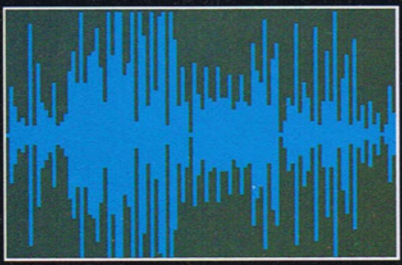


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EDITOR Bob Wade **PRODUCTION EDITOR** Damien Noonan **REVIEWS EDITOR** Andy Smith **STAFF WRITER** Maff Evans **TECHNICAL EDITOR** Jason Holborn **ART EDITOR** Trevor Gilham **DESIGN ASSISTANT** Martin Parfitt **DISK EDITOR** Richard Monteiro **CONTRIBUTING EDITORS** Jon Bates (Music), Brian Larkman (Graphics) **CONTRIBUTORS** Andy Storer, Dave Jones **ADVERTISING MANAGER** Jennie Evans **AD SALES EXECUTIVE** Paul Steer **AD PRODUCTION** Fiona Milne **AD SERVICES** James Leach **PUBLISHER** Greg Ingham. **SUBS/MAIL ORDER** The Old Barn, Somerton, Somerset TA11 7PY Tel: 0458 74011

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GAMES

FORMAT GOLD

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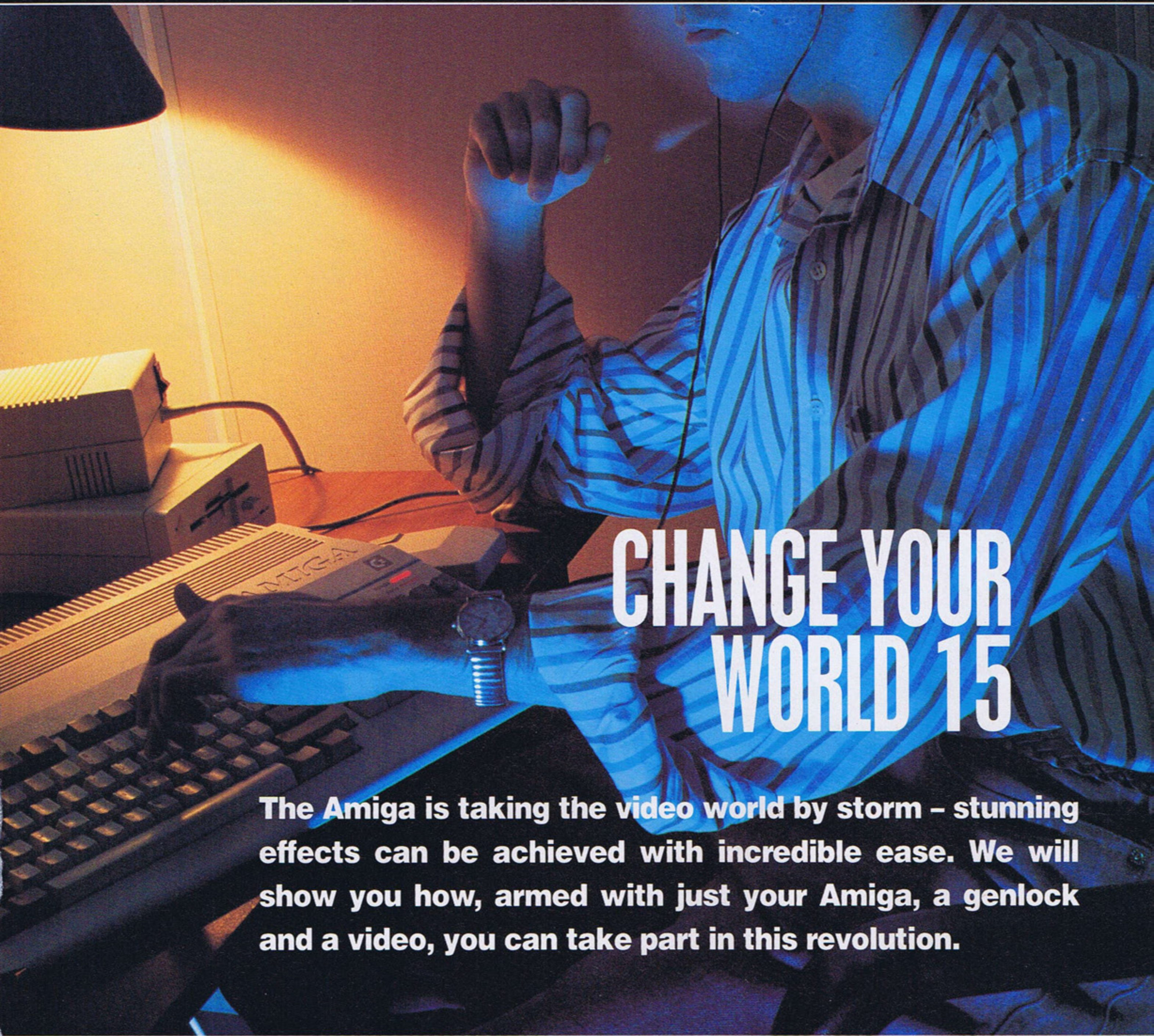
DISK EXTRA

X-OUT

Rainbow Arts get your trigger finger going with a playable demo of a wild and hectic shoot-em-up.



MENACE CODE and DEMO: First-level scrolling from Dave Jones' hard-hitting series ■ **PICPUZ:** Highly amusing puzzle games ■ **ULTRAPAINT:** Fully-featured paint utility with multiple screen use ■ **XOPER:** Display and control system activity ■ **WB HACKS:** More WB japes! **73**



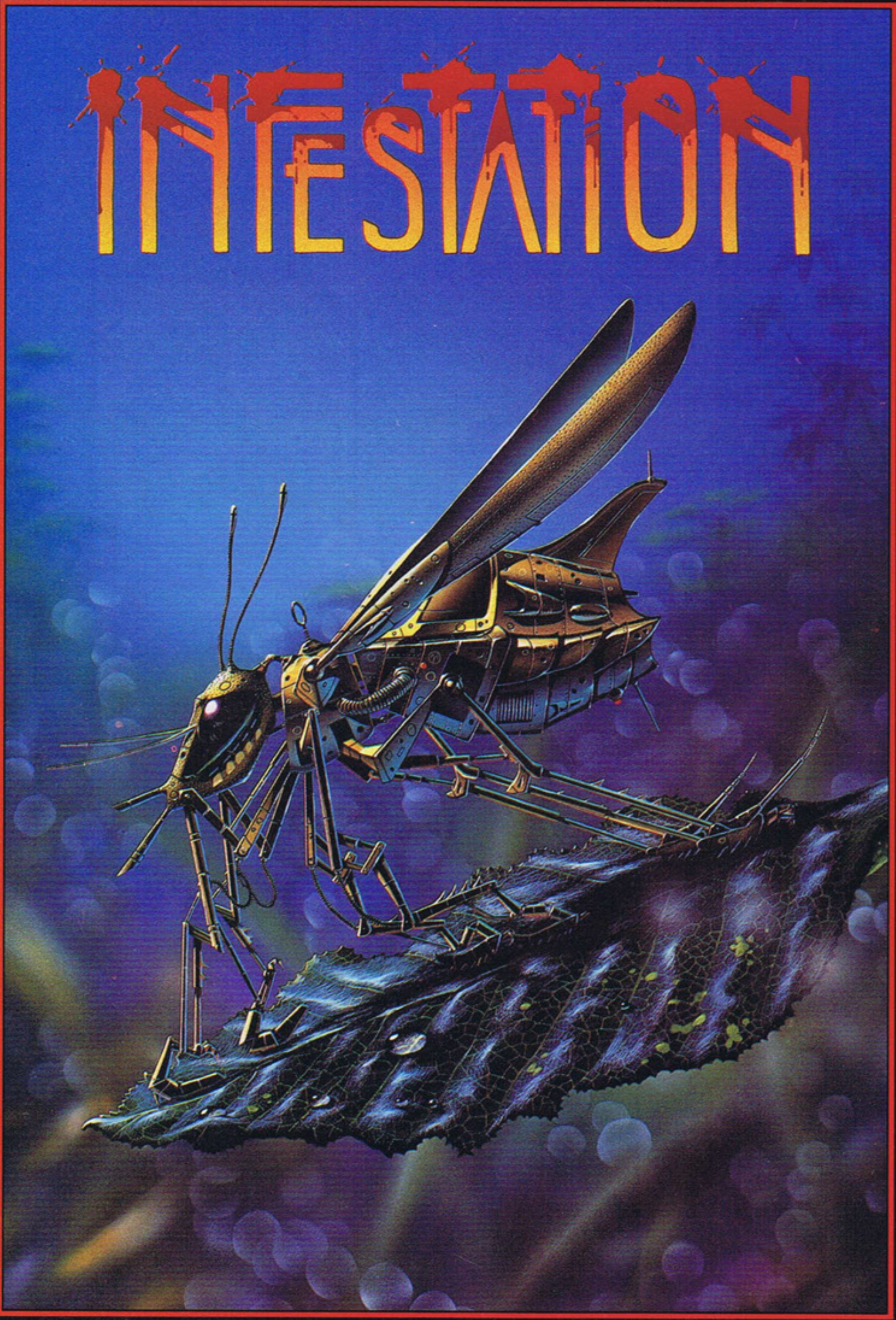
CHANGE YOUR WORLD 15

The Amiga is taking the video world by storm – stunning effects can be achieved with incredible ease. We will show you how, armed with just your Amiga, a genlock and a video, you can take part in this revolution.

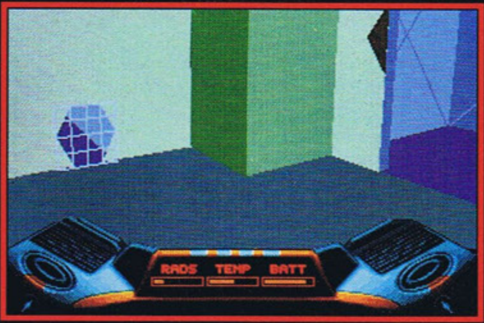


In Screen Play: *Austerlitz* rewrites history.

REVIEWS











INFESTATION

Are you ready for a new level of realism in computer games? Are you prepared for an atmospheric experience you will never forget? Can you cope with super-fast solid 3D vector graphics? Will you venture into the unknown, alone, and armed only with a single pulse rifle? Can you overcome the INFESTATION?

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INFESTATION is a truly atmospheric experience. Don't play this game when you're alone . . . it may well be your last!

Screen Shots from the Atari ST version AMIGA/ATARI ST £24.95

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XENON TECHNOLOGY GO UNDER

Xenon Technology, the mail-order company run by a 17-year-old youth has gone bust, owing substantial amounts of money. If you ordered goods from Xenon that have not come through then this is what to do.

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STUNNING NEWS OF CD-AMIGA CONSOLE

Commodore are developing a games console based on the Amiga and using Compact Disk technology. That's the startling news that emerged from the recent Consumer Electronics Show in Las Vegas.

The machine was apparently shown to a select few, all of whom had to sign non-disclosure agreements. However, a spokesman for Commodore in the UK said that such a machine was "not within our immediate plans, but there will be an announcement of radical plans for the Amiga in a few weeks."

The console has been dubbed the Amiga Compact Disk Console – the AC-DC – and apart from its use of CDs other details are sketchy. A console would be a major departure for Commodore, because they have never produced one before – computers like the Vic 20 and C64 have very much been classed as games machines, but a keyboard-less Amiga would be a whole new area for them.

It's also an area where there is intense competition already and more on the way, most of it originating in Japan. The Sega Megadrive, NEC's Super Graphx, Nintendo's Famicom and even the Konix Multi-System would provide stiff opposition in what already looks like a crowded marketplace. The main problem is that a basic Amiga with a CD incorporated would not be a cheap proposition, even with the cost of CD technology falling.

The, as yet, sketchy details and Commodore's denial of any immediate plans, could mean the console will never see the light of day, but even if it doesn't there are significant potential spin-off effects for the Amiga marketplace. For any console to be successful it has to have a good software base at the launch and be well supported with a steady release of titles. If games are being developed on what is basically an Amiga with a CD attached, then by adding a CD unit to the A500 or 2000 those same games should be easily adaptable to all existing Amigas.

If the CD technology becomes cheap enough and widely available, then the games market may be the starting place but it will have knock-on effects for serious and creative software as well. Interactive video, other forms of multi-media and other areas where large amounts of data need to be supplied, would all be revolutionised by such developments.

Could a CD drive for the Amiga range be Commodore's 'radical plans' for the Amiga, or are they going to spring some other surprise? Whatever is in store it can only do the Amiga market good and take the range further ahead of the competition. We would love to see both the console and the separate CD drive because the former will improve both the quality and quantity of Amiga software, while the latter will open up whole new vistas for more creative software. ■

AMOS UPDATE

It's almost here, really... we're not joking,... you can expect it in two weeks... er, maybe three,... ok, perhaps a bit longer than that. Yes folks, the program that you've all been waiting for, *AMOS*, isn't (as such) ready, well, it isn't actually going to be ready until, er, May.

It seems that Mandarin have discovered a torture treatment that even the ancient Chinese would have been proud of – water torture is nothing on this! Not content with making us wait an extra two months from the initial launch date (Mandarin originally promised *AMOS* for January), Mandarin have postponed the launch of *AMOS* until at least May. According to Mandarin, the main reason for the delay is the amount of time it is taking to write the manual. "We could just knock together a manual in a week or so, but we want *AMOS* to be as near to perfection as is possible" said Chris Payne of Mandarin.

The main workhorse of *AMOS*, AMOS BASIC, is finished and all that remains to be written is the Sprite designer and Music editor. According to Mandarin, these modules will take little more than a few weeks to write, and all that remains to be done is to finalise the manual.

Mandarin are completely devoted to making *AMOS* a success. For starters, all their programmers and beta testers who have been working on *STOS* (the ST version of *AMOS*) have been prised away from the STs to produce demos and full games that will be bundled with *AMOS* and even distributed within the public domain as soon as *AMOS* is complete. "As soon as people buy *AMOS*, they will instantly have access to a range of demo programs that we will be placing in the public domain". To back this up, Mandarin hope to produce several books devoted to *AMOS*.

Also planned from Mandarin are *AMOS* versions of their *STOS* add-ons, Sprites 600 and Games Galore. Although Mandarin have no plans to produce an *AMOS* version of their *STOS* sound sampler, *Maestro*, they are considering rebadging an existing sampler and then rewriting the sampling software using *STOS*. Already plans are afoot to produce an *AMOS* version of Rombo's Amiga video digitiser, *Vidi*, which will be called (not surprisingly) *AMOS Vidi*. ■



***AMOS*, the game programming utility, has been delayed again**



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GREAT VALUE, THAT'S THE MAGIC OF MERLIN

A500 TO GET PC EMULATOR

For along time, A500 owners have looked on in envy while 2000 users enjoyed the best of both PC and Amiga worlds with the Bridgeboard PC Emulator card. However, all that will change with the announcement of the KCS Power PC board from Bitcon Devices.

The KCS Power PC Board is a hardware-based emulator that provides the Amiga 500 with complete PC compatibility. The board is based around the NEC V30 processor, running at 8 Mhz. For those among you who know about such things, the board uses the most popular version of the MS-DOS BIOS, Phoenix BIOS. For graphics freaks, the board provides MGA, Hercules and CGA video support.

Although the vast majority of the task of PC emulation is handled by the KCS hardware, the Amiga is employed to handle the tricky business of looking after the screen, port and disk drives. Most PC Emulators usually fall over when programs start to bypass the MS-DOS operating system and start hitting the screen hardware, but the Power PC board is more than ready for anything that they can throw at it. According to the Dutch producers, KCS, the Power board can handle any amount of jiggery-pokery that PC programmers may use.

Even on a standard A500, the Power PC Board allows a full 768k to be used by PC applications. How is this achieved? Well, not only is the board a PC emulator, but it is also a 1 Mb RAM (that's an extra megabyte!, taking your A500 upto 1.5 Mbs in total!) expansion and battery-backed clock.

If this hasn't sufficiently whetted your appetite, then give Bitcon a call on 091 490 1975 or write to them at 88 Bewich Rd, Gateshead, Tyne + Wear, NE8 1RS. Meanwhile, look out for a full review in a future issue of Amiga Format. ■

VIRGIN GIVE BIRTH

Virgin's French arm, Virgin Loisirs, have just formed a new label, Cryo, which they say will "open the way to the next generation of software designers, artists, programmers and so on" who will "create expanding horizons for our imagination in tomorrow's fascinating technology world" – whatever that means. The idea behind the label is to promote products developed in France for the world market and notable names like Didier Bouchon (*Captain Blood*, *Purple Saturn Day*), Patrick Dublanchet (*Kult*) and Michel Rho (*Macadam Bumper*, *Get Dexter*) will be working closely with the label. ■

ELECTRONIC ARTS FLUSH WITH ENVI

The recipients of the first Commodore Enterprise with Vision (ENVI) award at last year's industry dinner were Electronic Arts for their *Deluxe Paint III* package, which in Commodore's eyes was the best designed software product to take advantage of the Amiga's facilities. As well as the award Commodore also donated £1,000 to the Royal Variety Club charity, the beneficiary of the dinner, and another £1,000 to Electronic Arts who also donated the money to the charity.

EA had double cause to celebrate on the night as the Bullfrog programming team picked up two awards: Programmers of the Year and Best Original Game for *Populous*. ■

FRANKLIN SLAMS TV SHOW

Commodore UK boss Steve Franklin has delivered a critical broadside at the BBC documentary on computer addiction, calling it "biased" and "alarmist".

The programme was part of the QED series and investigated the problem of computer addiction and its effects on social behaviour – highlighting the case of a 13-year-old boy who was addicted to his Nintendo console. Franklin criticised the show because it "focused a great deal on the more violent type of games being played on arcade machines rather than personal computers, although the implication throughout was that the programme was all about computers."

Franklin went on to lambast the coverage of computers in education, saying it was "badly stated" and that "the role of the computer as an aid to teaching the new National Curriculum subjects was completely ignored – the emphasis was largely on experience in the US which is not entirely relevant to the UK."

He also highlighted the fact that Commodore had sold nearly 250,000 computers over the Christmas season, all of which were sold with software of an educational nature and some without any games at all.



Steve Franklin: slams BBC documentary for being "biased" and "alarmist"

"Parents need to appreciate that computers can also help their children learn more easily and express themselves more fully. Without doubt, computers will be an important everyday feature in the lives of today's younger generation and the QED programme will have given their parents a very biased and alarmist picture."

We couldn't agree more about the appalling manner in which the media generally portray computer users. We are all written off as 'overpaid whizz-kids', 'mindless addicts with no social lives' or 'boring boffins'. There has never been a TV show that adequately satisfied the vast majority of computer users – or even got close. The industry has never had its own voice, it has always been well-meaning (or in the case of QED ill-meaning) personalities presenting largely irrelevant and poorly thought out programmes. Roll-on the day when we have our own programme, not some pseudo-intellectual drivel or sensationalist claptrap. ■

GET TRAINED

Checkmate Systems are offering an installation and training service to anyone buying Amiga computers from them within the M25 area. They will deliver the system at a prearranged date and time, and spend an hour installing the system and training the family in the basic use of it. If extra hardware is bought or extra money paid when ordering, the training time can be extended. You can also buy training time separately from equipment. If it proves popular enough Checkmate will extend the service outside the M25 area. Contact Checkmate Systems on 01 923 0658 or at 80 Mildmay Park, London N1 4PR. ■

MIRRORSOFT'S NEW REPEATS

Sequels are the order of the day in the Mirrorsoft camp at present. Cinemaware are to release *Ant Heads*, the follow up to *It Came From The Desert* (reviewed issue 7 – 80%), the game based on all those great big bug movies of the '50s. *Ant Heads* will retail for £14.99 and you'll need *ICFTD* to be able to run it.

Coming on the Image Works label will be *Speedball 2*, due sometime in the Autumn. Pop star programmers The Bitmap Brothers are working on the project which includes enhancements like a playing area twice the size of the original and greater control of the team's attributes and tactics. ■



The Bitmap Brothers are back starring in PR photographs and with a sequel to *Speedball*

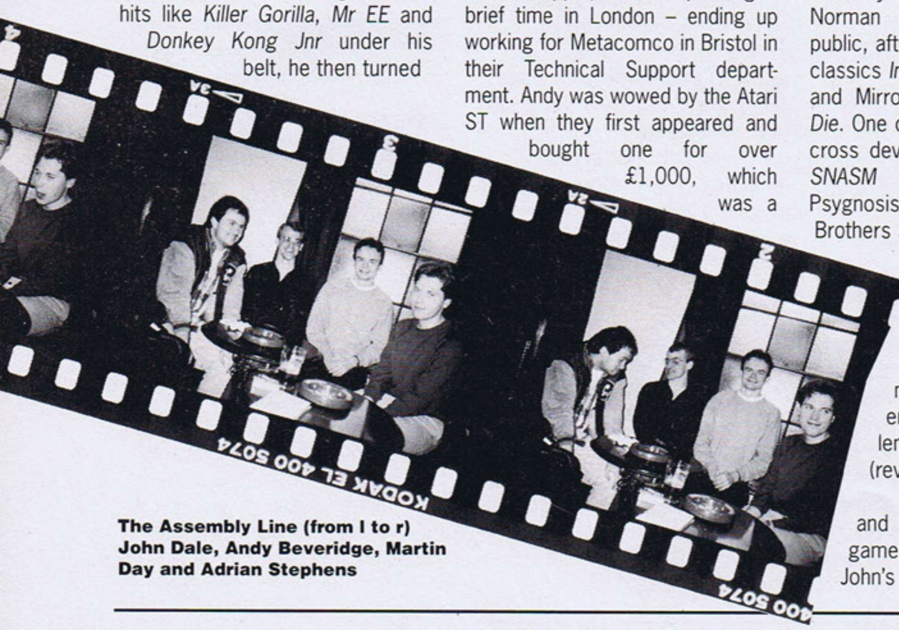
WHO THE HELL DO THE ASSEMBLY LINE THINK THEY ARE?

Adrian Stephens, Andy Beveridge, Martin Day and John Dale, who make up programming team The Assembly Line, may not be household names — but you've certainly seen, or at least heard of, their work before. Not convinced? How about *Killer Gorilla*, *Powerplay*, *Xenon II* or *Interphase*?

This gang of four, who have only been together as TAL since last November, have been responsible for all of the above titles, but they go back a lot further.

Adrian Stephens first got into programming back in '82 when the BBC was booming. After a short while and a string of Beeb hits like *Killer Gorilla*, *Mr EE* and *Donkey Kong Jnr* under his belt, he then turned his attentions to bigger machines and worked with Arcana on their excellent trivia/strategy game *Powerplay*. He teamed up with Andy Beveridge on a Rainbird project called *EPT* which never saw the light of day despite many long months of development – "the whole thing just got too big" reflects Adrian. His last venture was Mirrorsoft's *Interphase* (reviewed in issue four – 88%).

Andy Beveridge first got into computers back in '79 when he owned an Apple. He spent a while developing hardware and software for the Apple, before spending a brief time in London – ending up working for Metacomco in Bristol in their Technical Support department. Andy was wowed by the Atari ST when they first appeared and bought one for over £1,000, which was a bargain at the time. Then Andy met a guy called Tony Rainbird at an Atari show and showed him his spec for a game with the working title of *EPT*. The next year or so was spent working with Adrian on the title before going off to Realtime to finish off the project. After a great couple of years with Realtime "who really helped me, I learnt a lot" Andy left to join TAL.



The Assembly Line (from l to r) John Dale, Andy Beveridge, Martin Day and Adrian Stephens

Martin Day also goes back to the days of PETs and TSR 80s and may be better known as Spiny Norman to the gamesplaying public, after writing the Audiogenic classics *Impact* and *Helter Skelter* and Mirrorsoft's *Fernandez Must Die*. One of his latest projects is a cross development system called *SNASM* which companies like Psygnosis, Realtime, The Bitmap Brothers and Vektor Grafix use as an upgrade to the now long in the tooth PDS system. Martin also worked closely with pop star programmers The Bitmap Brothers on Mirrorsoft's excellent shoot-em-up *Xenon II* (reviewed issue 3 – 93%).

Coordinating the team and designing a lot of the games is John Dale. Although John's the only non programmer of the group he's been involved with the others for many years and goes back to the days of Impact with Martin. John gave up the glamorous life of a full time auditor to join the team back in Sept '89 and now splits his time between designing games, dealing with companies and racing the office Scalextric cars.

The team aren't tied to any one publisher and future releases should include the highly addictive *Pipemania* from Empire (a demo of which will be on next month's cover disk) and *E-Motion* from US Gold. As a team they have a lot of respect for their peers, including David Braben, although Adrian reckons "*Zarch* was a cop-out" in programming terms. High praise from Andy goes to Realtime for all their 3D work, although The Assemblies, and especially the vociferous Adrian, reckon 3D games (when coded by someone who knows what they're doing) are going about as fast as possible and more thought should go into using 3D in more creative and varied ways.

The Assemblies would like to get into console work in the future because it's rumoured there are large amounts of money to be made for people of their talent, "we do everything marginally better than anyone else" pipes Adrian, while Andy keeps his feet on the ground and admits that "if we had loads of money we'd start loads of projects and not finish any of them".

We're selfishly hoping they never make too much money because it would be a sad loss to the games world if they had to stop working for a living. ■

AMIGA BRAIN CONTROL

A system of controlling the Amiga purely by thought is now being developed by Bernd Von den Brincken and Mike Weber in West Germany. The prototype model demonstrated at the sixth annual Chaos Computer Club Communication Congress is called 'Cyberspace'. The name is taken from the science fiction stories of William Gibson where hackers jack into the vast data networks by placing electrodes on their heads, moving from computer to computer purely by thought.

The early stage of development was on display and being test driven during the three day convention. The user is positioned in front of the the Amiga screen and has four electrodes taped to his forehead to read in his brain waves to a PC. The clone would then process the information and send the data to the Amiga for display in real time. The user then controls the graphic screen display and his brainwaves through various forms of concentration.

The unit on show was designed for the testing and the collection of data for use in the final product. "The first step is to get a feedback over from the brainwaves through the computer and display it on the screen, you see the pattern and the pattern you see changes and so you have feedback. And you can learn to steer you're brainwaves directly", explains Bernd Von Brincken.

His partner, Mike Weber has been working with the idea of brain control for the last four years. "I started using the Amiga because I designed light shows, and I would take photo's from the screen for disco's etc. For the brain screening system I wanted to use a system that did fast animation. In the first place I wanted to use a video synthesizer because it was fast, but then I found software that was good enough on the Amiga, The Director, which is a basic script language for graphics and also GFA Basic which is really good for programming.

"We have an IBM compatible to analyse the brainwaves but we haven't finished the software for that, we need a faster way to do that and we need some statistical functions to do it to. From there we take the parameters out of the brain waves that have to do with certain areas of the brain and connect them to colour and brightness parameters to create a direct physiological feedback.

"Ideally we would like to have the software on the Amiga analyse the signal and also display the graphics and allow the user to connect online to other computers."

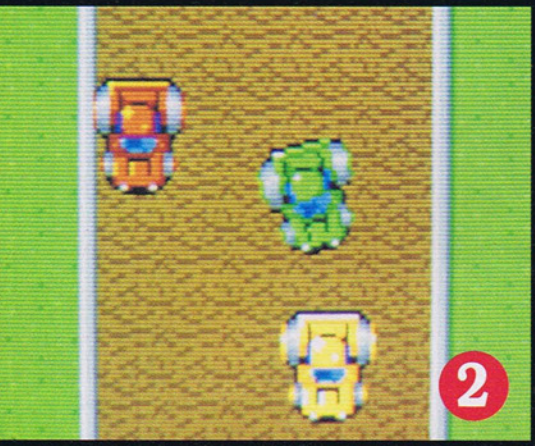
The system is still in it's infancy and the end product won't be on the store shelves for a few years, so don't throw away your mouse yet. "The next step is to connect many people who have had practice with steering brainwaves, in a realtime mailbox system. Then people can communicate over a graphic elements, intuitive system so they won't be forced to put they're ideas into text and type it out on a keyboard and this is the idea of Cyberspace." ■

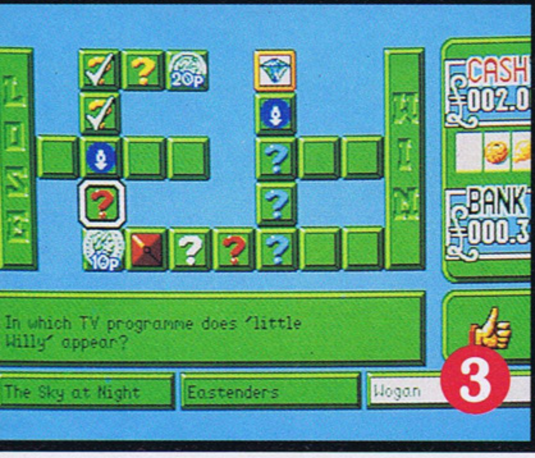


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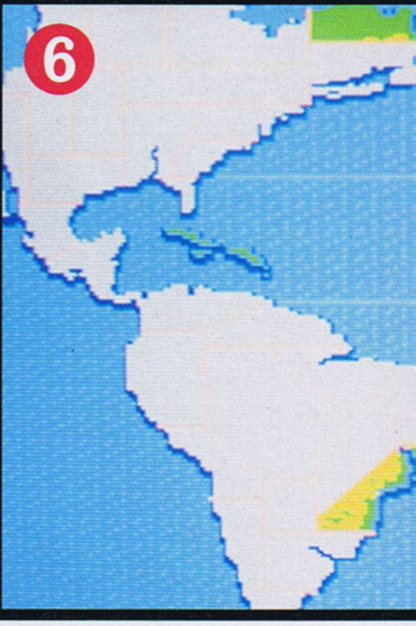












COMING ATTRACTIONS

What games are you going to be saving your pocket money up for in the next couple of months? Here's a sneak preview of games the software houses will be tempting you with.

DOMARK

1 *Castle Master* is a solid 3D arcade adventure set in 16th Century England in which the player has to rescue a prince (or princess) from one of the four castle towers, which is not easy when you consider that each tower is made up of several rooms and floors and your progress is hindered by evil spirits who infest the place. Your sub-quest is to flush out all these nasties and make the place habitable again. The game uses an enhanced form of Incentive's Freescape system (familiar from *Total Eclipse*, *Driller* and *Dark Side*) so expect plenty of puzzles to ponder over and, hopefully, to solve.

ACTIVISION

2 If you're interested in driving games, *Hot Rod* will be here 'real soon' to tempt your purse. The action is viewed from above in a game which has been converted from the Sega coin-op and allows up to four players to compete at once. There are some 30 tracks to race round, and natural hazards like snow, rain and sand to deal with. Still, enhancements can be bought in the parts shop at the beginning of each race and the amount of money you have to spend depends on how well placed you were in the previous race. This will be zooming onto a shop shelf near you any day now.

AUDIOGENIC

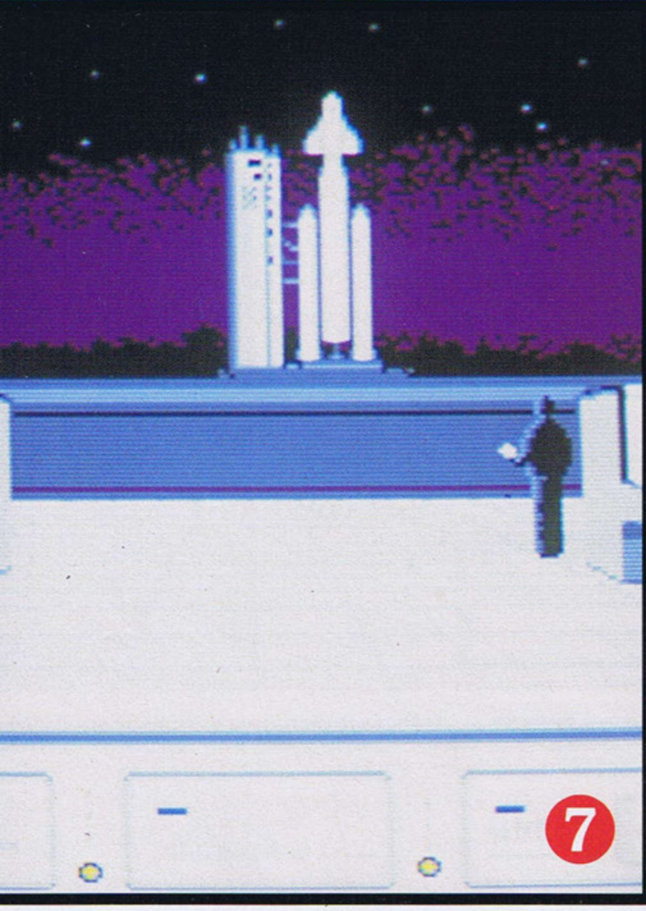
3 *Emlyn Hughes Arcade Quiz* is a new and innovative development in computer quiz games loosely based on the format of the popular pub style trivia machines, yet combining the strategy of a traditional board game.

It's not all about sport, though: you'll have to answer questions on rock and pop, arts and literature, people and places and so on as you make your way across the board on one of the 10 levels fraught with twisty routes and dead ends. There are even special feature blocks to aid you including blasters, which blow up multiple question blocks, and clockstoppers which freeze the scrolling track.

US GOLD

4 AD&D fans are in for a treat with *Champions of Krynn* which has been programmed by Norm Kogel, the chap behind the Format Gold-rated strategy wargame *Red Lightning*. This promises to be the first full-blown RPG game in the AD&D series: in this first instalment the player











guides his party of characters (the party is composed of six player characters and two non-player characters) through a web of intrigue and combat to defeat a plot by the forces of evil to establish the dark queen Takhisis as undisputed Ruler of Krynn.

Player characters include Kenders and the Knights of Solamnia in addition to the races and character classes found in Pools of Radiance (it's coming, it's coming!) and Curse of the Azure Bonds. Players will also have the opportunity to meet and work with characters from the Dragonlance novels – Tanis, Tasselhoff and Caramon – in the struggle to overcome evil.

5 Keeping with the mysterious theme, but deviating a bit is *The Knights of Crystallion.* Billed as a whole culture rather than a game, this one promises to really drag you in to its world. The idea is for the player to gain prestige, power and respect by first managing the household funds and then later by undergoing four tests (plus a few puzzles). The graphics and sound are both amazing, so watch out for the definitive review in next month's Screen Play.

ELECTRONIC ARTS

6 The latest SSG game is *Gold of the Americas* which allows up to four players to step back in time and struggle for possession of the New World. Buy trading and warships to earn some money through trade, hire pirates to rob other ships, then pay armies and colonists to claim this brave new world.

Keeping with the strategy theme, Imperium is due to be released soon. This UK-developed title is a complex strategy game set in the years following 2020. The player seeks to become the last surviving emperor of the galaxy by manipulating economic, diplomatic, military and political factors. Budding galaxy rulers, keep your eyes peeled.

COKTEL VISION

7 Out soon on the Tomahawk label will be *European Space Simulator,* which allows you to get behind the controls of the infamous space shuttle as you head for the stratosphere in order to set up some satellites.

Before getting there, though, you'll have to kit out the shuttle, choose your crew and load up with whatever needs dropping into low orbit. Manage to do all that and it's solid 3D time as you attempt the delicate task of actually launching the satellites.

GRANDSLAM

8 Coming soon from German programmers Thalion will be *The Chambers of Shaolin,* a one or two player beat-em-up with an oriental theme. Before taking the ultimate challenge you'll have to bone up on skills in the various training chambers where you can learn to handle yourself against a variety of armed, unarmed and inanimate assailants. All together now... HI-YA!

MICROILLUSIONS

9 Winner of the game with the tackiest name award this year will go to Microillusion's *Dr Plummet's House Of Flux,* an *Oids* cum *Thrust*-ish blast that gives the player 28 screens spread over four increasingly difficult missions inside Dr Plummet's alien infested fortress. Nimble fingers and precise control will be the order of the day when this one arrives.

VIRGIN

10 Those who like their adventures tough will be pleased to hear that *Demon's Tomb* boasts 'some of the toughest problems you'll ever have to tackle'. Set in rural England you have to unravel the mystery of why an Egyptologist has died while working on an archaic tomb. The game features a customisable screen interface, command line or menu entry system and a coded help line. Ooooo! Spooky Mister Egypt head!

MINDSCAPE

11 Following on from *Moebius* of a couple of years ago comes *Windwalker.* Once more you can get a taste of the Orient in this action role playing game. Train with the masters in all aspects of the martial arts before setting off into a world full of hundreds of characters to interact with including monks, merchants, alchemists and dragons. There are over 100 locations to explore and find adventure in, so you shouldn't be stuck for something to do. Oh, and an interest in the I Ching and other eastern philosophies may be an advantage.

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INFORMATION

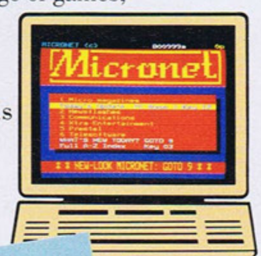
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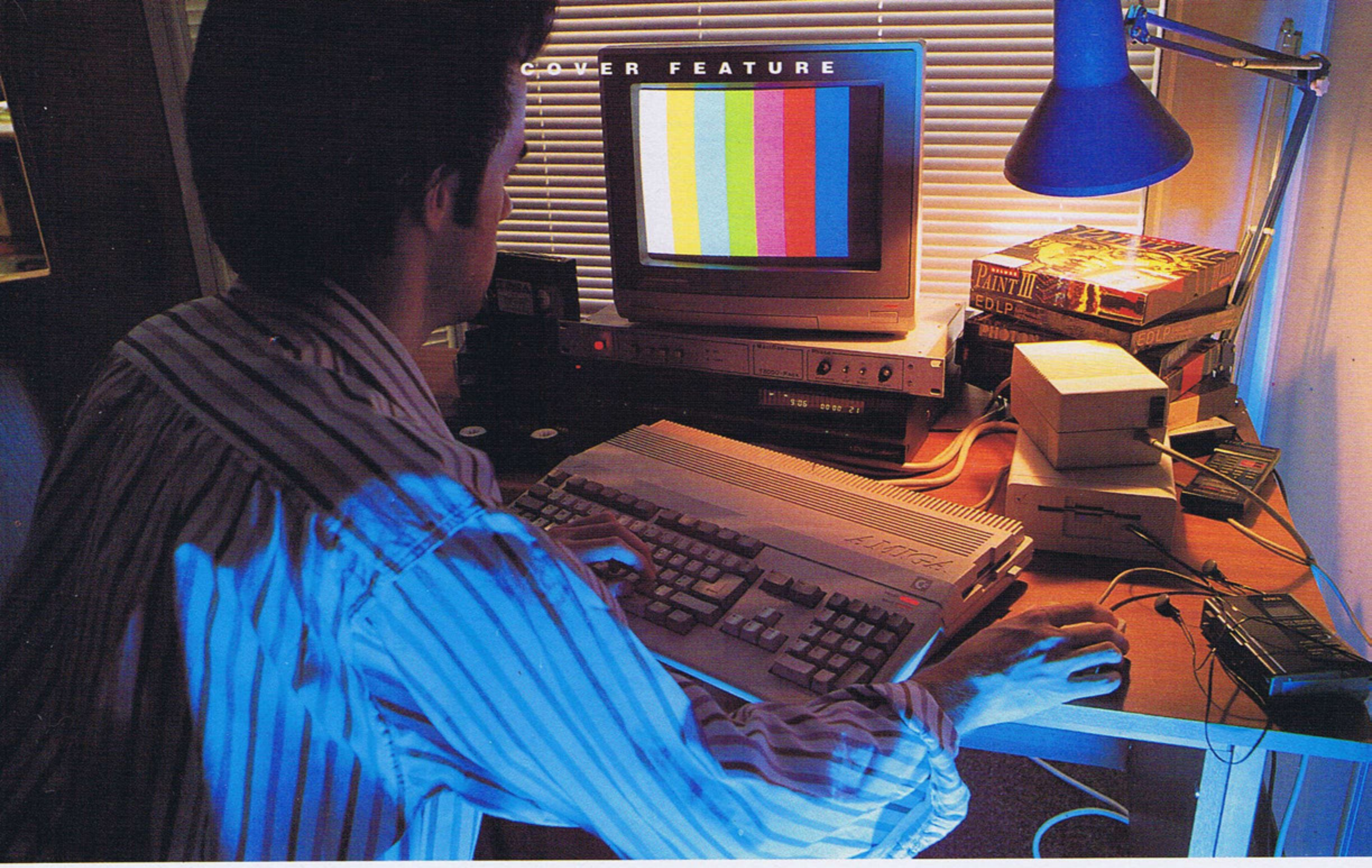
____________________ Age: ______

Tel. No.: ____________________ AMF6

Machine Type: ____________________

MICRONET

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Picture this – a fully-digital special effects suite at your fingertips with infra-red drivers linking your computer to videorecorders so that all deck controls including freeze frame, single frame step and visible high speed search can be controlled from your desktop. Video editing features include adjustable pre-rolls for frame accurate insert and assembly edits, an edit preview mode and an automatic edit decision list generator. Integrated digital effects comprise graphic and title overlays, picture-in picture facilities, wipes, fades and dissolves. You would have in your hands a system that only five years ago would have cost you over £100,000. You can have it today for less than one per cent of that price. What's more you already own half the kit involved – you only need a genlock and some state-of-the-art software and the picture's all yours. Yep, it's an Amiga desktop video system.

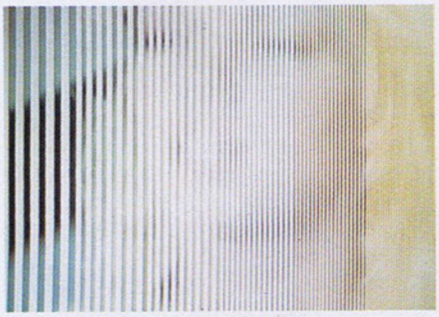
Aside from all the other hi-tech-specs heralding the Amiga's launch was one simple little feature that may have been lost among the 4000 multitasking colours, but in hindsight proves that Commodore's development engineers were a very forward thinking bunch of boffins indeed. They thoughtfully included external sync pulse in the Amiga's CPU right from the start. As such, your machine can rightly claim to be the only reliable low-cost means of producing videotape material from the desktop in existence.

For although video production systems exist for other machines, notably the Macintosh and Archimedes, the Amiga has a greater selection of cheaper hardware and software in this rapidly growing field. For the demand for low-cost video effects, editing, titling and animation is as enormous as the market from which it derives – the massive arena of domestic videorecorders and camcorders.

Video processing on the Amiga is the most cost-effective alternative to both home and professional video editing suites and has been made possible by that one little addition. That external sync pulse capability made Amiga genlock devices possible – and you only need to look to the ST to see what a difference it's made. That machine has only just got it's first genlock and there's no software out yet to utilise it. With the Amiga, developers have had five years to get their acts into gear so genlock hardware and video effects software abound.

ASAP's *MaxiGen T8000* is the latest device available and its RGB output capability makes it an ideal replacement for domestic and semi-professional applications for which you would have to pay video facilities houses an arm and a leg.

CHANGE YOUR WORLD

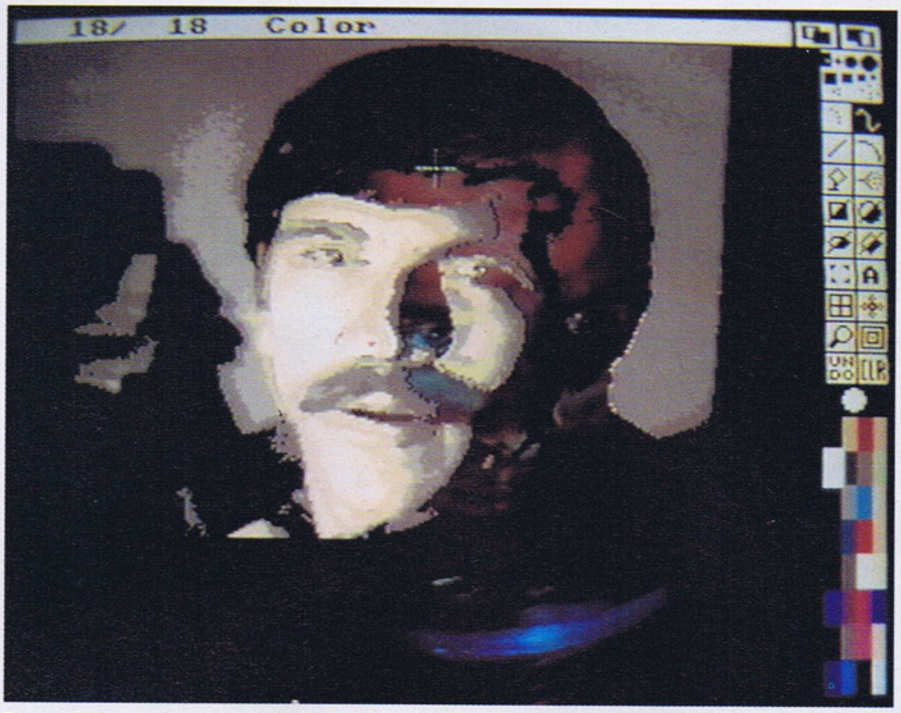


Even the test functions in VideoStudio can be incorporated intogenlocked productions

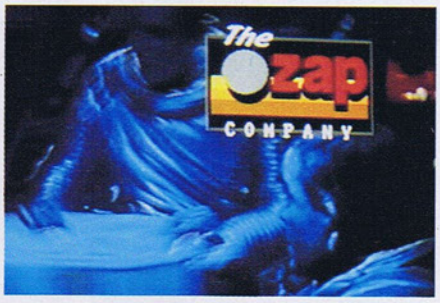
So underground he's unknown, sometime film maker ANDY STORER guides you through the means of making your Amiga the ultimate low-cost desktop video editor.

You don't need to be a mechanic...

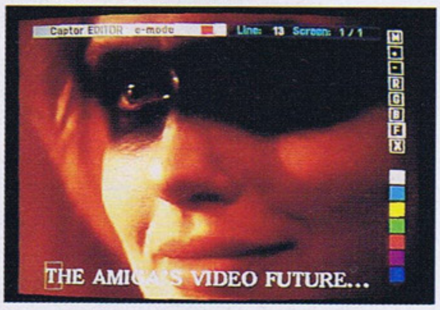
The *T8000* genlock allows you to superimpose computer and video displays on a single screen by synchronising the output from the Amiga's video chip with that of a live or recorded video source. It works by synchronising and locking together the line and frame generators of each display's refresh rate, hence the name ▸



For more abstract productions, digitised animations produced using *Photon Cel Animator* can be remixed with the original pre-digitised material to produce multi-layered images.



Logos can be designed in an art package like *DPaint III* and overlayed onto video sequences for rerecording.



VideoStudio's built-in caption editor allows a good range of text fonts and sizes to be manipulated, positioned and colourised with ease.

'genlock'. After providing both horizontal and vertical scan synchronisation it presents you with rock solid superimpositions. This is achieved by combining the three separate RGB signals from the Amiga into a composite video or PAL signal which is in turn combined with the composite video output from a videodeck.

An on-board video chip allows you to control the horizontal position and phase of the signal on your screen through the genlock's front panel. The resultant signal is a mix; a superimposition of the video signal on a specific colour you've made 'transparent' in your computer image – usually blue. Alternatively, the video image can be behind the computer image where the chosen 'transparent' colour is the only one visible – the choice is referred to as foreground or background 'keying' or 'masking'. So for instance, displaying titles over a video image, like the subtitling in foreign feature films, is foreground keying while for any applications where the computer screen borders are active – in wipes and fades – background keying is used. You can flick between the two modes from switches on the *MaxiGen*'s control panel – or you can choose to just view the original computer or video displays.

But remember, just because you have a video mix on screen doesn't mean you can save moving video images to disk. The genlock is merely superimposing one image over the other – the signals themselves remain entirely independent. However it is possible to direct the mixed output to videotape, since the signal reaching your monitor in mix mode for all intents and purposes appears as a single signal.

To drive a car...

So what ends can you put all this to? Firstly you may wish to record some Amiga productions to videotape instead of disk. It might be a lengthy animation sequence you've designed which you may wish to superimpose over a recorded video sequence.

The kind of material here might involve overlaying foreground material such as animated characters over a landscape background. With a little care you could 'borrow' a sequence from a TV programme or film, note its duration and lay it down to tape before sequencing your animation to fit.

Or you may want to send out demos of games or sprite routines to software houses on videotape instead of sending hot source code. Here all you would need to do would be to record the demo over black videotape. Perhaps you might want to combine code with digitised backdrop as a possible scenario for some future game based on CD-ROM format when its Amiga incarnation arrives. You needn't in fact do anything more than say, watch TV on your monitor as a background task while you're waiting for a complex ray-tracing operation to take effect.

The *MaxiGen* is particularly well-equipped in the area of 'printing' to videotape as it allows you to output a mixed signal in the form of RGB – a picture quality far superior to that of composite video. As such, the composite video display you've been manipulating on your Amiga monitor is only like an off-line work area because the eventual output is converted back to RGB. So when it comes to animation you're away – you can output high resolution animations as long as a four hour videotape, no longer being constrained by RAM or hard disk capacity. Or, if you use an Amiga for heavy duty database management then videotape could act as a useful backup medium.

But it's probably in the area of overlays that a genlock like *MaxiGen* can be most effectively used. Simple operations, such as adding titles to a videotape are achieved by opening up a window on your Amiga desktop and setting its background to a 'transparent' colour, booting up an Art or DTP package and overlaying the text. Alternatively you can use a dedicated paint or video package like *DPaint III*, *DVideo III*, *Deluxe Productions* or *Video Studio* to produce a range of animated, scrolling credits or 4096 colour logos to overlay. This is probably the easiest way of producing superimposed material – the custom routines take out the torment of do-it-yourself trial and errors.

In this way you could annotate photographic albums you've previously digitised as well as add titles to home video productions. It might be something as useful, yet profitable, as producing a looping window display for your company that shows your product line along with details of special features and products.

At the end of the day your Amiga video hardware and software exists as an enhancing tool to the already secure and installed medium of video. What next? Demos for broadcast TV? Offers of promos for your local bands? The only limit on the extent of use is the limit of your imagination.

Desktop Video Editing

It's not too difficult to see how we can enter the realms of desktop video editing on our Amigas without too much trouble. After all, if you have the means of combining live and/or recorded video with computer images, all that's needed is some means of sequencing the results to videotape.

But it's here that things can get a little tricky because results are entirely dependent on the quality of the videotape recorder you're using. In 'assembly' editing, where you're merely pausing your recorder while the next section of programme is being selected and added after it, the recording machine must make sure that the sync pulses recorded on the control track of the videotape line up with the previous passage. If this isn't done, there will be a disturbance caused by loss of sync between the assembled passages of recording. Unfortunately the majority of domestic VHS decks have been designed without this simple facility.

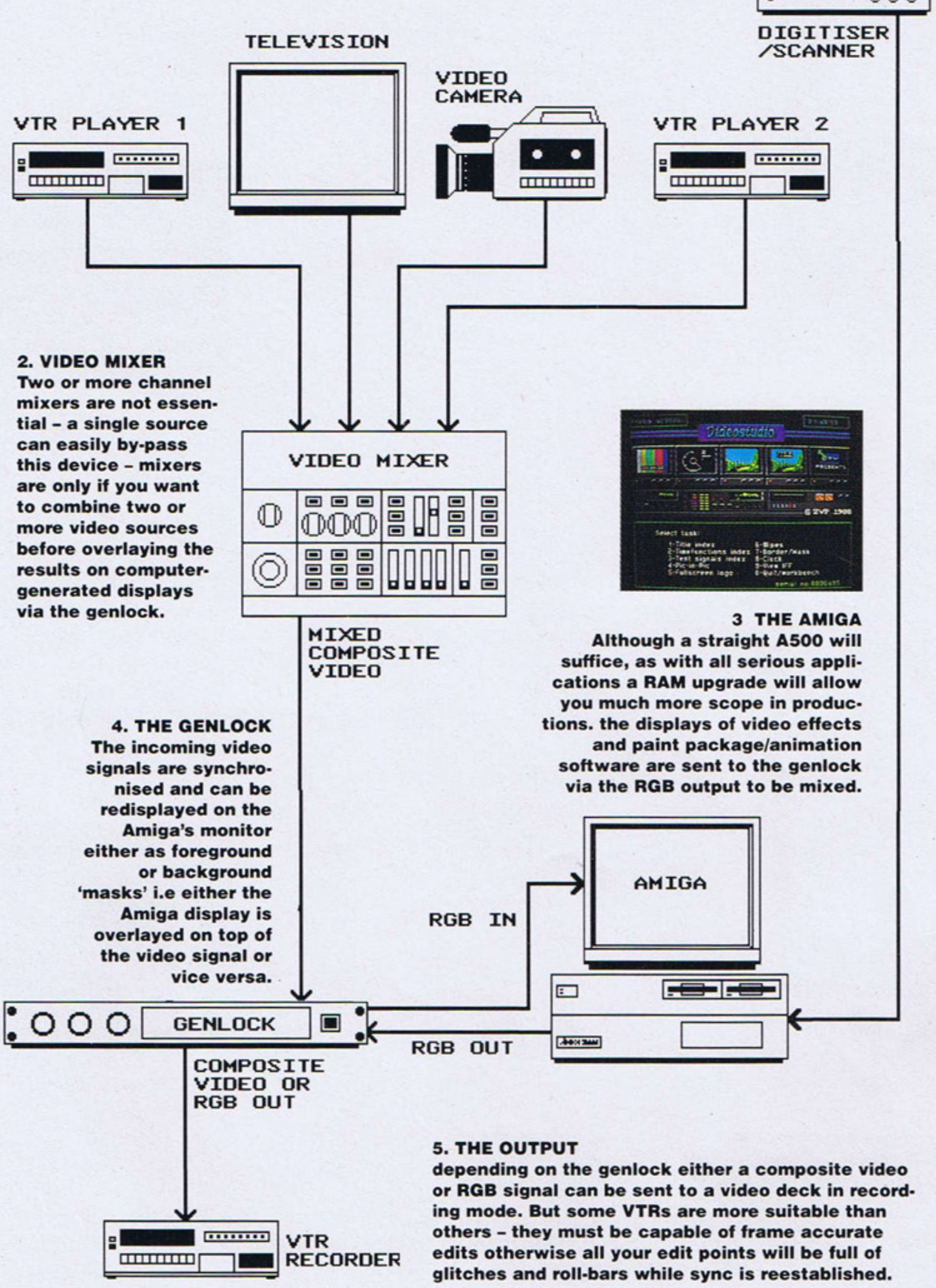
To check whether your machine has it, look for the machine backspacing along the tape for a second or two prior to it resuming recording in pause mode. This delayed response

THE COMPLETE AMIGA VIDEO SYSTEM

This diagram shows the basic set-up you need to use an Amiga in video. It also has some extras thrown in that are not essential like the mixer and additional input devices.



1. THE SOURCES
Any video source – be it a videotape deck, camera or live TV capable of outputting composite video or RGB signal can be directed to the genlock. Likewise, digitised or scanned images can be imported into the Amiga in the normal manner, processed and sent to the genlock for mixing with the other video source signal.



2. VIDEO MIXER
Two or more channel mixers are not essential – a single source can easily by-pass this device – mixers are only if you want to combine two or more video sources before overlaying the results on computer-generated displays via the genlock.

3 THE AMIGA
Although a straight A500 will suffice, as with all serious applications a RAM upgrade will allow you much more scope in productions. the displays of video effects and paint package/animation software are sent to the genlock via the RGB output to be mixed.

4. THE GENLOCK
The incoming video signals are synchronised and can be redisplayed on the Amiga's monitor either as foreground or background 'masks' i.e either the Amiga display is overlayed on top of the video signal or vice versa.

5. THE OUTPUT
depending on the genlock either a composite video or RGB signal can be sent to a video deck in recording mode. But some VTRs are more suitable than others – they must be capable of frame accurate edits otherwise all your edit points will be full of glitches and roll-bars while sync is reestablished.







allows sync to be reestablished before any new recording is added. The result is a 'clean' cut without roll bars or glitches. Another problem is that of machines which lose tape position because they unroll or unlace the tape when in Stop mode. Beta or Video 8 machines are preferable to VHS as they both have these crucial features.

Also essential are machines that have search modes based on the control pulse track so that individual frames of the assembled recording can be located. It is best if this reads hours-min-secs so that it's compatible with the time code readouts found in some of the best art, music and video effects packages. Good video editing requires accuracy down to 1/50th of a second as each frame is composed of two scans. VHS recorders that unlace tape as they pause or stop cannot use the control track for a counter, making them useless for the essential facility of 'Insert' editing.

Editing of this kind is mostly used to tidy up assembly edited sequences, although it can be used to edit material in any order you wish rather than having to start at the beginning and finish at the end. Again Video 8 and some of the later Beta machines are the only decks where you'll be assured of this facility. As insert editing is used to drop in new sequences over old it's obviously essential that your machine must have a control-track time readout to enable frame accurate inserts.

But most professional video editors use insert editing all the while – it's much more convenient than assembly editing. It's a little like the process involved in using a music sequencing package, but instead of laying down a drum track as your reference beat you lay down a digital time code readout – an 8 figure number that appears overlaid on the black background to be recorded onto. In this way you always have a guide to the start and end points of the blank tape you wish to record a clip onto. Working from paper beforehand, you can build up a track guide that illustrates the sequential running order of your production. Insert editing in this way is more convenient because if you are operating from a number of different source tapes you don't need to keep swapping them ad nauseum. But it remains a shame that in the face of personal computers and hard/software designed to bring professional video editing to your home it's the common or garden VHS deck that lets down the side. The alternative is to use ▶

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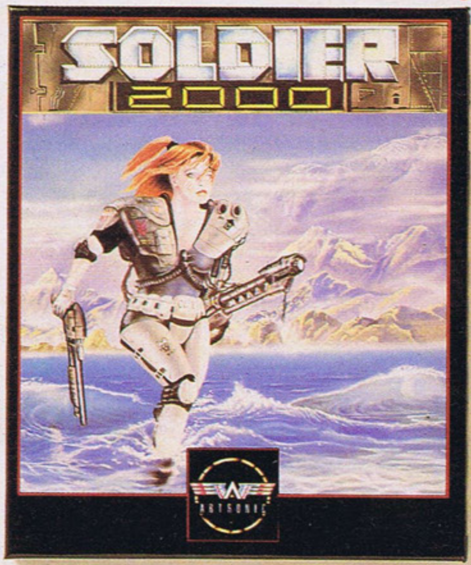
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video 8 or hire in some professional U-Matic gear.

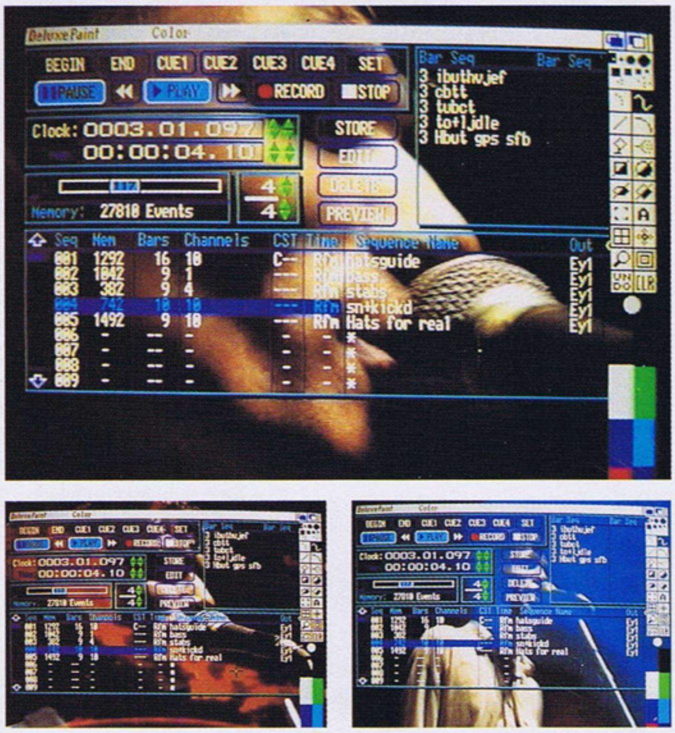
Producing Amiga Promos

So if you have a 'compatible' videorecorder connected to the *Maxi-Gen's* RGB output it's always essential to start by doing pre-edit rolls of your video material to determine the exact timing of the machinery Just how long exactly does that videorecorder pre-roll before it 'bites' on an edit? How long at a frame accurate level of 1/50th second does it take for your finger pushing a key to translate to a title appearing on-screen? When you have it down to a tee, just hit Record on your recording VTR and you have an edit.

Better still, you can use a package like ZVP's *Video Studio* which provides you with all the low-level video production tools you're likely to require. You can easily use it to produce animated text and you soon have rolling credits to lay down to tape. But instead of laying titles onto video, why not lay video onto music or speech? You could go so far as to use digitised video material from either a live camera or recorded video source, after maybe looping the results with a package like *Videon*, and lay down the sequences onto videotape already containing a music track.

Of course, you have to make sure you have a deck which will allow you record picture over existing sound – there's some which will fill the audio track with white noise if you try it – but if your machinery is okay it's quite easy to combine animated, off-air and live material with trendy full screen captions and create your own DefCon II style promos.

If you want to take this a stage further you can load up *Music X* or *MasterTracks Pro* and follow the



Promo videos can now be produced from the desktop. Using Music X's built-in time code functions it's possible to use a genlock to build up video sequences synchronised to music tracks. After the start and end points of particular clips have been synced to the required durations they can be assembly edit onto videotape. If you're using multiple video sources, these can be combined using a mixer to provide even greater stylistic control over your music's visuals.

time code readouts to get perfect accuracy for your video sequence durations. All you have to do then is superimpose your sequencer software over the video material which you wish to use, obtain the likely durations of your inserted edits and record them to videotape. With a little practice, it's not too difficult to make that smash of the cymbals coincide exactly with a stunning jump-cut.

If however, you're lucky enough to have three videorecorders and a videomixer available you can push the technology to the max. Using two as source decks switchable through the mixer, you can push them through the Amiga where they can be treated to realtime digitising, colourising, and superimposition before the results are recorded onto the third.

Once you've experimented with Amiga home video editing and reckon you can pull the tightest cuts in the west you may wish to hire in some additional gear to make your efforts even more professional. Time Base Correctors are one piece of kit you might like to get in as these allow realtime sampling of video signals so that digital drop-out can be compensated for. TBCs maintain picture quality through continuous processing which negates 'glitches' in video images. Here we're talking custom hardware however, as sampling rates are typically four frames a second so we're looking at prices of £100 a day to hire. This may be worth the price if you're doing a promo for a band – the results are instantly impressive. But if you want to submit work to video or TV companies for CV submission or possible broadcast then you should really be mastering your material on 3/4 inch U-Matic videotape or Beta-Cam SNP. Again it's best to hire the gear in – for around £50 a day per deck – as you can always pre-master everything on video 8 or VHS beforehand and use the original control code readouts as a guide for the master edit.

Helping Hands

All this may sound a little daunting but of course there's a range of excellent Amiga software to help you out. Before utilising any of it though you might be advised to buy some extra RAM and second drive as you're going to be dealing with memory and disk intensive operations. A digitiser or realtime frame grabber will also be worth considering buying as it provides a good basis for importing images, which can be used as guides to emulate as 'hand-drawn' images material.

Also, before embarking on any video production it's worth getting into the habit of storyboarding your Amiga movies. This saves valuable time and colour clashes when keying left, right and centre. So what are the essential supporting software and hardware you'll need to become an Amiga video producer?

WHAT YOU NEED AND WHERE TO GET IT

FOR OVERALL VIDEO PRODUCTION (and out on its own...)

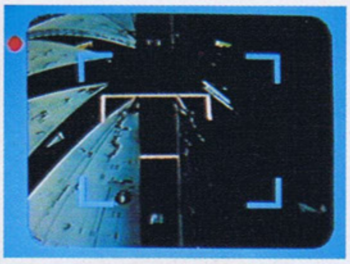
Deluxe Video III from Electronic Arts on 0753 49442 for £99.99 is the best all round package for combining computer and video images via a genlock. Although it offers none of the useful utilities present in *Video Studio* from ZVP, its impressive range of features include super smooth animation, borderless overscan mode for graphics on videotape, dozens of transition for sophisticated screen effects and frame accurate timing right down to 1/60th second. In addition it offers automatic scrolling backgrounds, colour cycling animation, and an object-orientated *HyperCard* style interactivity which allows you to build multi-level branching. This last point shows the way to the future, as it enables true interactive video where your Amiga can be used as the controlling component in a system that drives videorecorders in realtime. As such training, presentation and promotional films take on new meaning – the user has control over the narrative he or she is experiencing by defining the pathway to be explored. Live video overlay and fades are also in there along with full support for all Amiga graphics and sound modes.

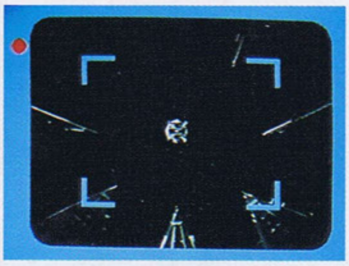
FOR IMAGE PRODUCTION

The Amiga has an excellent range of art packages at its disposal for working into video productions. Worthy of note are *Deluxe Paint III*(£80) from Electronic Arts on 0753 49442. This excellent package produces hi- resolution keying areas for genlocked superimpositions, and can be used for producing background pictures and retouching digitised images. It can also quickly produce animated sequences. For a further £25 you can get your hands on *Real Things* from RGB Studios on 082 581 2666. This little beauty is an add-on which allows you to construct detailed choreographies of animated sequences with ease. Also worth a look are *Photon Paint 2* at £89 from Microillusions on 0703 703030, which is good for manipulating HAM images and *DigiPaint 3* from NewTek (available from HB Marketing on 0895 444433) at £70 which offers good text manipulation for titling effects. *Fantavision* from Domark on 01 780 2222 for £40 is also great for creating foreground animations that can be superimposed on video-generated backgrounds, but since the created objects are silhouettes it might be best to use the excellent 'tweening' facility to export the objects to a package like *Sculpt 4D* from ACS on 031 557 4242 for £368 which is an excellent 68020 compatible animated ray-tracing



VideoStudio's cueing functions are indispensable for achieving accurate timings – fades, wipes and dissolves can all be timed to a tee





A genlock can also be used as an enabling device for software production. Why not plan action sequences for a game on the basis of existing film footage? – It's not too dissimilar from the way in which licenced software conversions from movies find their way to the small screen.

suite allowing animation productions complete with shadows and reflections.

But for the ultimate...

FRAME BUFFER AMIGA CENTRE SCOTLAND 031 557 4242

A sub-£1000 24 bits per pixel frame buffer allowing 16.7 million colours at 900x600 resolution on a standard Amiga. Combine this mother with a genlock and you'll be pushing the boundaries only just recently extended by six-figure systems like Quantel's *Paintbox* and *Harry*. Digital Pictures beware. With 3 megs of onboard RAM all images can be fully double buffered and used in conjunction with NewTek's latest 21-bit *Digi-View* digitiser producing the current state of the art Amiga-wise.

FOR TITLING

Although *DPpaint III* can be used effectively to generate titles, custom software like *Aegis Videotitler* from HB Marketing for £96 can do the job a lot more easily. It uses Amiga fonts in any resolution to produce a range of captioning effects to create animated titles. There's also a variety of wipe transitions on hand. But the best of the bunch is *Video Studio* which also comes along with an impressive range of transition effects.

FOR VIDEO EFFECTS

Video Studio from ZVP (available from Maze Technology on 01 520 9753) for £99 is the state of the art for dedicated video effects as it incorporates 12 of the most commonly used video production utilities in one package. 20 broadcast quality fonts are on hand with nine wipe patterns and a comprehensive suite of broadcast test signal patterns. Fades up and down are included as are logo and copyright screens you can customise yourself. You may also utilise broadcast style VTR control code time readouts. For budget productions you might also consider *TV Show* from Brown-Wagh for £61, which is a low-cost effects package concentrating on wipe effects produced by using an editable script file to create synchronised sequences. But something like *Videon* from Power Computing on 0234 273000 for £250 might be better since it allows you to map 4096 colour digitised images onto the surface of any objects generated in an art package. Ideal for sexy superimpositions!

ADDITIONAL ILLUSIONS

Cel Animator from Microillusions on 0480 496497 for £100 is a useful component of the *Photon Video* suite which allows you to convert colour drawing to rendering and video tape production. Both digitised and 'hand-drawn' images can be synchronised to sound tracks and played at varying speeds. Automatic loops and slow motion can also be employed. Microillusions' *Edit Decision List Processor* at £299.95 is also well worth a look since it allows you to keep track of all edit points and offers duration times as well. The company's *Transport Controller* at £200 enables infra-red control of videotape recorders thus disabling the human error of nerves – hitting a Record button right on cue while leaning over enough wires to make a bolognese is something to be avoided. ■

GENLOCKS GRABBED

Most genlocks support the range of Amiga models, though, of course, it's worth checking this out before hand – even better is to ask suppliers to forward you a manual before hand as these babies don't come cheap! However the ideal solution is to visit a show and see one at first hand.

Commodore itself has badged two devices – the *A1300* and *2300*. Prices are a bit sketchy on the former but it is intended solely for use with A1000s and isn't reported as providing a particularly good signal mix, whilst the *2300*, at £250, provides a better output but still not one suitable for braodcast standards. As it uses the Amiga's video slot it can't be used in conjunction with Flicker-Fixer and is only able to provide background keying.

For a cheaper no frills affair, *Minigen* from Applied Systems and Peripherals at £114 is probably your best bet as it knocks out a good stable signal and uses the RGB port. Rendale's *A8802* genlock is a good quality PAL device supplying both foreground and background keying for £287 and which provides near broadcast quality, though its older brother the *8806* at £800 provides broadcast quality output. It fits on an internal card and uses the video port but has selectable colour keying, composite video and RGB mode mixing.

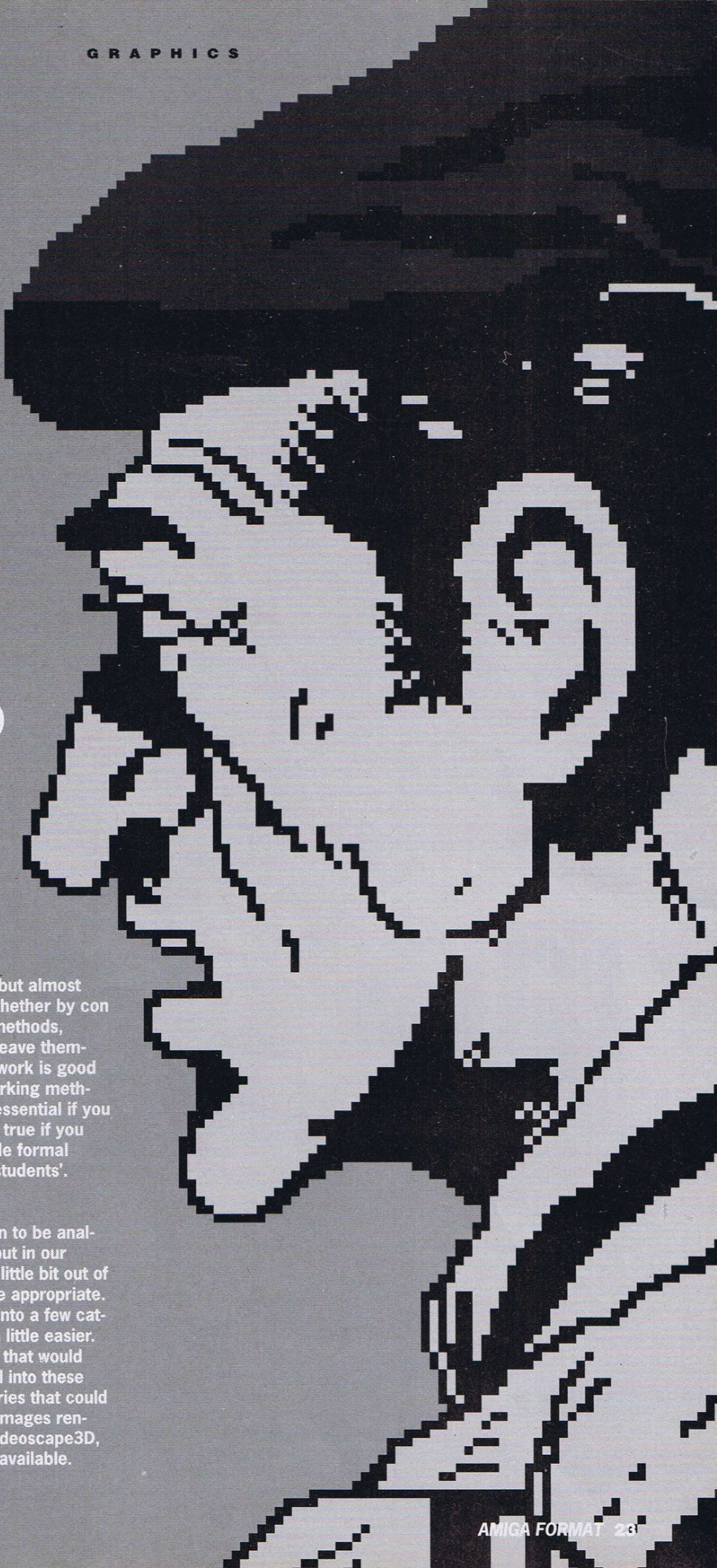
The *G2 Videocentre* at £595 is another professional performance genlock with video mixer and PAL encoder allowing fade and mix controls through software and supporting Super VHS machines but *SuperPic* at £574 from Precision Software might be a better bet as it combines a digitiser with frame store along with genlock. It can grab 50 frames a second to the framestore before displaying them as a sequence on screen mixed with external video.

Triangle's *T8000* at £914 is pitching in there at quite a high price but it boasts full broadcast quality and is probably unique in that it features a sub-carrier phase adjustment making it ideal for use with professional video mixers. However the Neriki *Image Master* at £1000 is the top of the range price-wise but doesn't have a particularly good range of features or performances despite this.



In the life of every art student the day of reckoning eventually dawns when all of their recent work must be displayed for public criticism in "The Crit". BRIAN LARKMAN takes the role of Art Tutor.

"THE CRIT"



Criticism is a hard thing to take, but almost everyone producing artwork, whether by conventional or by computerised methods, intends it to be seen and so inevitably leave themselves open for criticism. Whether the work is good or bad an informed analysis of your working methods, techniques and subject matter is essential if you want to progress. And this is especially true if you are an isolated computer artist with little formal training and no interaction with other 'students'.

Where's the Rays?

None of the work shown here was sent in to be analysed – it was just meant to be shown – but in our efforts to give our readers something a little bit out of the ordinary, a gentle 'crit' seemed quite appropriate. The most suitable images fall naturally into a few categories and this makes the discussion a little easier.

There were dozens of other pictures that would have been equally suitable but didn't fall into these categories, and dozens of other categories that could have been used. Surprisingly, very few images rendered with a 3D package – Sculpt3D, Videoscape3D, Turbo Silver, Design 3D, C-Light – were available. Where are they all?

WILDLIFE



Black Panther
by MARK OTWAY

Strangely, considering all the possible animals that could have been chosen as a subject to immortalize with pixels, by far the most popular are cats, big and small. Of the three featured, the best illustration is "Black Panther", painted with PhotonPaint and almost certainly copied and adapted from a photograph.

The realistic folds of the animal's face and the sharp, wet quality of the mouth capture much of the ferociousness of the original. Good HAM packages such as *Photon Paint* and *DigiPaint* are especially good at this sort of relief drawing, because the wide range of tones available helps portray rounded, 3D objects accurately.

The weakest part of the picture is the cat's whiskers which have a severe case of the jaggies and so do not 'sit' well with the smooth 'photo-realism' of this type of illustration. A little anti-aliasing would have helped here, though Photon Paint makes this difficult because it does not provide true anti-aliasing, one of its few omissions. A bit of a trivial point really, but it wouldn't have taken long to soften the stepping by hand in 'Magnify' mode.



Tiger
by NATHAN GAYDHANI

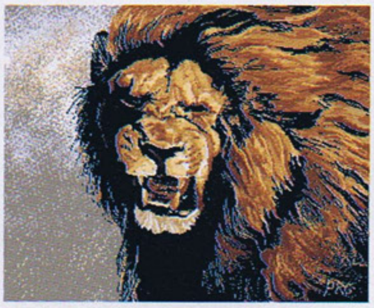


BWL Tiger
modified by BrIAN LARKMAN

Slightly less effective is "Tiger", painted in Deluxe Paint using a rather gaudy palette reminiscent of some murals or the 'TakeAway school' of Middle Eastern paintings.

The Tiger itself is drawn strongly, but is let down by the background which was obviously painted on later around the beast. One of the great advantages of computer painting is the ability to produce the foreground and background separately and paste them together later. This ensures that the foreground objects stand out against the background rather than being surrounded by a 'caution zone' halo, as in this case.

Usually a very effective background can be produced, with even just a few colours, in *Deluxe Paint* by using the Shade,Blend and Smear modes with a couple of leaf-shaped brushes. I hope that the artist will forgive the slightly modified version of his pictured included for comparison, with a new background and subdued colours. The changes took less than five minutes but definitely improve what was in any case a good wildlife drawing.



Lion
by PETE GOODSON

Pixellation effects are much less of a problem for "Lion", executed in a freer, more painterly style. Again the face has all the fierceness of a wild lion and the mane is especially well drawn but the overall effect is less photo-realistic and more flat because only about16 colours have been used.

A subdued background in the warm but washed-out colours of the 'bush' might have given more sense of depth overall, and slightly stronger colours and better definition around the mouth would have emphasised this focal point. A powerful image nonetheless, that shows clearly the strength of free, impressionistic drawing, even on a computer.

LANDSCAPE

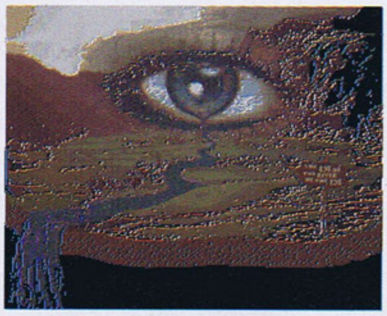
Drawing a convincing landscape can be one of the most difficult tasks. Blending together the subtle cues of light and shade, rough and smooth texture, vegetation, rock, water and weather takes years of practice by conventional means and just as long using a computer if you start from scratch. But computer painting allows the use of several shortcuts, as you can see from the examples here.



Lady In Red
by EDWARD SEYMORE

The wide range of tools for blending, dithering, colour gradation and transparent effects provided by *DigiPaint3* and *Photon Paint2* mean that a high degree of subtlety can be used to draw freehand landscapes, providing you understand the tools and follow some basic rules. "Lady in Red" appears to have been drawn this way using *PhotonPaint.*

The background vegetation and rocks, and even the folds of her dress for that matter, have all been drawn with the highlight set in the same position. This means that light and dark have an overall continuity in the picture, emphasising the direction of the light source, and hence modelling the objects realistically in 3D.



The Eye
by NATHAN GAYDHANI

"The Eye" is constructed mostly from digitised photographs, pasted carefully together using *Photon Paint.* Provided the edges are always properly blended in – as in this picture – any number of pieces can be pasted together to form a composite landscape.

Most HAM painting systems provide a 'Blend' mode that makes the edges of a brush transparent to some degree so that they 'feather in' with the main picture when they are pasted down. Where "The Eye" falls down is in the hand-drawn parts, the river, the waterfall, and the signpost. If you draw freehand over digitised images it is essential to also use the Blend mode here so that your lines 'wash in' with the background at a similar resolution: so that they are equally blurry.



All Defences Broken and...



...Warcoach by MARTIN EVANS

"Alldefencesbroken" and "Warcoach" also use digitised pictures but employ 'false colour' techniques to give the image a surreal, abstract quality that is quite striking, especially considering they were drawn with the restricted palette of Deluxe Paint. The trick is to use a range of colours with a similar 'Value' – the 'V' slider of 'HSV' on the palette – so as to maintain a tonal continuity across the picture. This is one of the techniques that will be described in a later tutorial on the use of colour in *Deluxe Paint.*



Lone Hornet
by L J ASTON

At the opposite extreme, software tools can be used to draw the whole landscape for you

using fractals. "Lone Hornet" cleverly uses a fractal landscape rendered using the scenery creator from ST/Amiga Format Coverdisk 8. The subtle cues of light and shadow, terrain and vegetation mentioned above are all accurately blended into a realistic landscape. The exact geography is left up to the program, so you have little control, but the result is very convincing. Over this landscape, the artist has pasted rather flat drawings of aircraft that stand out rather too much, at least partly because of the clearly-defined dark outline around them. This gives a cartoon-like quality that is discussed below.

CARTOON AND FANTASY

By far the majority of images sent to Amiga Format have been cartoons, fantasy paintings or copies of record sleeves, so these categories could not be left out. Most of the cartoons are direct copies from comics or newspapers – especially Garfield for some reason – and these are deliberately left out. The cartoon included seems to be original: correct me if I'm wrong.



Football
by B M FAHY

"Football"uses single-pixel lines in a very subtle way. The figures are drawn using pale lines, except around their outlines, and the overall feeling of the illustration is of a unified pale palette that gives a flat cartoon-like quality to the figures, even though they are in fact shaded. In places the background is a little ill-defined and confused but the outline around the figures makes them stand out. This outline, the flat palette colours and the obvious caricatures are what make this a strong cartoon.



Hysteria
by DAN OSBORNE

A very different use of line and flat colour is shown in "Hysteria", presumably copied from a Def Leppard album cover. Here the lines have a neon light quality that could have been achieved 'automatically' using Smoothing in *Deluxe Paint* but appears to have been created by hand, so the aliasing is still quite apparent.

This may be deliberate because the lack of smoothing or anti-aliasing gives the whole picture a hard-edged quality that might otherwise have been lost. Overall, the image looks quite chaotic but in fact their is a strong diagonal structure at work throughout. This is almost certainly thanks to the original illustrator, probably working in a conventional medium, rather than the computer artist who submitted it to Format. No matter, the principle is the same. If the picture is to work visually it should have some sort of structure, even when the subject is apparently chaotic.

PORTRAIT

At its best, portraiture should do more than just show a likeness of the subject: it should portray something of their character and spirit as well. Depending on the skill of the artist, this spirit can be extracted just by the subtle way that features are drawn, by the way the subject is positioned – lighting, background, juxtaposed symbols – or by the actual painting style used. All these methods are employed to a lesser or greater degree in the four examples shown here.



Lady
by WILLIAM NEARY

"Lady In Red" was painted with *Photon Paint* and so the look of the figure is determined to some extent by the characteristics of that program. The final effect is really rather bland. Little true character seems to show through. The woman is drawn well enough – the facial features and the folds of the clothing are very well executed – but the technique employed somehow prevents the real person from showing.

It may be that the figure is drawn from imagination and represents a sort of 'idealised woman' excluding personal character. Sadly this is often the case with computer art, for the medium itself can exclude the psychological involvement that is neccessary for character interpretation to take place. Pen and ink or brush and paint are somehow more immediate than mouse and pixels!

(Left) Lady in Red
by EDWARD SEYMORE

Compared to "Lady", however, "Lady In Red" is full of character: but this doesn't matter, since "Lady" is a very different sort of painting. In this case the image is a very stylised picture of a woman's face and it is the style that really matters: it is a pure illustration rather than a portrait. This is the sort of picture often used in adverts for hair, fashion, make-up or jewelry where lifestyle is all important and the character of the model seemingly counterproductive. The gestural quality of the lines and the almost careless application of colour are verging on the abstract. A computer is very good for working in this style because it is easy to apply colour underneath the lines, either by placing the drawing over the colour as a brush, or by using 'Stencil'.



Man
by WILLIAM NEARY

It may say something about computer artists in general that the pictures of women shown here seem to lack character but those of men are both full of it. "Man" has been drawn in just three shades of grey and the use of these tones and the hard edges give a bleak look to the image that works well with the lined, careworn face.

Flat colour and solid dark outlines are usually the characteristics of cartoons, but in this case the picture goes beyond that sort of blandness and seems to model the figure quite successfully. By drawing an apparently arbitrary line between light and dark, the artist has actually defined the 3D form very well. This is quite a difficult job but at least using a computer you have the chance to make lots of modifications until you get the effect right.



Amvk231
by PIERRE JOLIVET

"Amvk" uses a number of techniques to instill a feeling of bleakness and menace into the viewer. To start with, the face itself is totally haunting. The artist has managed to overcome the limitations of mouse and pixels to produce a series of marks just like those made by a paintbrush wielded with force.

Perhaps he worked from a digitised painting or drawing. This can be a very useful first step when producing a picture, introducing a much freer, 'painterly' element.

The sense of menace is doubled by repeating the face twice. Your eyes are drawn inevitably to one pair of eyes in the picture and yet you always have that feeling of being stared at by the other pair. A very effective device that is made far easier to set up on a computer.

Less important is the use of cabalistic symbolism, yet this also sets the scene. Its use has been handled with admirable restraint, so that the background only becomes apparent after several views of the picture. A powerful image. ■

DELUXE VIDEO 3

BRIAN takes a brief look at the latest version of Electronic Arts' graphics control program.

Almost from day one of its existence the Amiga has been seen as an excellent graphical presentation system – lots of colours, good sound, fast animation – all these had to be used for more than just games. One of the first programs available in Britain to make this power an easy-to-use reality was *Deluxe Video* from Electronic Arts.

The 16-colour limitation of the dual-playfield system that it uses mean that it has been overtaken by other packages, such as *The Director*, that utilise all of the Amiga's modes. Now *Deluxe Video* returns as Version 3, completely rewritten and set to become the most powerful and comprehensive presentation system ever for the Amiga. This mini-review is just a taster for the full working review complete with tutorials, tips and shortcuts in our usual thorough style, that will appear in *Amiga Format* very soon indeed.

Power Control

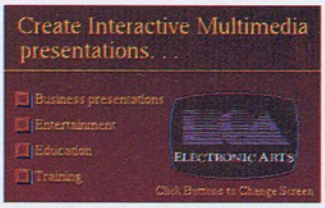
The real power of *Deluxe Video* has always been its interface. It allows pictures, moving brushes, sounds and music to be mixed together to form 'scenes' and complete 'videos', on a straightforward and accurately-timed graphical display. The interface is the one thing that has survived to Version 3 from the original, so seasoned users will soon feel completely at home.

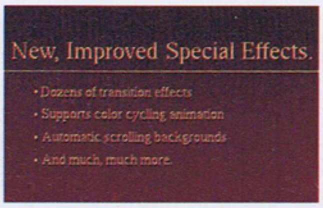
Also quite familiar is the wide range of cuts, wipes and fades available to provide professional-looking transitions from one scene to the next, though the range has been very much broadened. Overall the program has been greatly expanded in its versatility yet simplified in its operation – mainly by standardising the requestors.

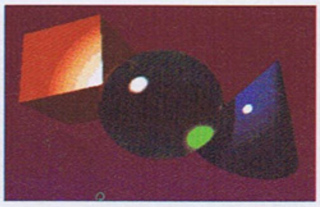
First Impressions

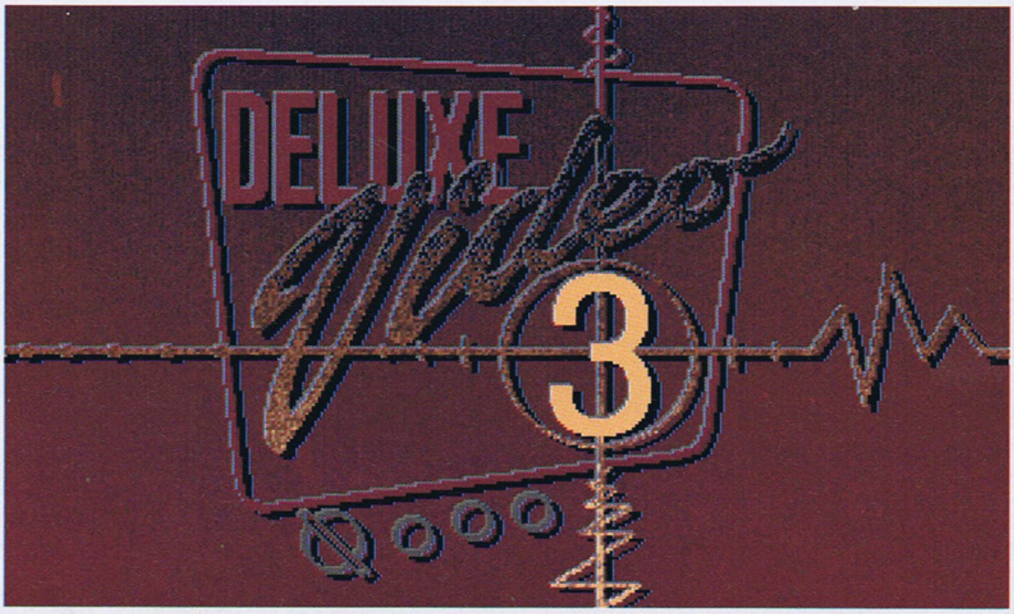
Anyone who has a range of graphics and animation software will have at some time wished that several pieces of animation could be joined together with some sort of special effect or wipe, or that some extra element could be added later without remaking the whole anim. *The Director* from The Right Answers Group provides a lot of this sort of control but it is a Basic-like script language that many find too daunting. *AniMagic* from Aegis allows Anims to be pasted together and provides some amazing special effects, but has no sound and is difficult to learn. *Lights, Camera, Action,* also from Aegis, is even more difficult.

Deluxe Video seems, at first sight, to have it all: but let's wait for the full review, shall we? For now the only slight fault is the lack of forward skip on the control panel: to get to the end of a scene you have to sit through the whole thing. A trivial gripe perhaps, but it is very annoying when you are trying to tune the transition from one scene to another! ■









These are pictures that come with the program, exhibiting the sort of titling and animation it can do.

FEATURE PACKED

Listing just the new and improved features in detail would take up more space than this mini-review will allow, so a list of the most important new features is all you can have for now!

Supports Anims and *DPaintIII* AnimBrushes.

Any standard Anim files in any resolution can be used as a scene or background over which brushes, *Deluxe Paint III* AnimBrushes, and special effects can be operated.

Works in all Amiga modes including HAM, EHB and Overscan.

No longer restricted to 16 colours in low and interlace modes, *DVideo* will now mix together on one video parts created in any mode, and in some cases play them together.

Uses Super Bitmaps for larger than screen-size scrolling effects.

Animations can be scrolled over background images that are larger than the screen and panning effects can be created.

Supports 8SVX sound files, SMUS music files and has MIDI output.

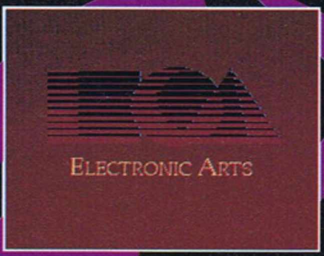
Controls SuperGen genlock for software control of fades etc.

Support for ARexx messages to external devices or program drivers means that, for example, SuperGen can be made to fade one video source to another using an example script file which is provided on disk.

Define Brush and AnimBrush movement with editable path. The movement of objects on screen is defined by dragging them along the required path. Fine tuning can be added because the path is vector graphic and so therefore its points can be edited.

Attach one moving, animated brush to another for relative motion. Objects created at different times can be made to move in unison by attaching them to each other. For instance, dolphins could follow a ship or planets orbit a sun.

Interactive Video: using a Control Track and Wait, GoTo and Label effects a video can be made to branch dependent on mouse clicks or joystick selections.



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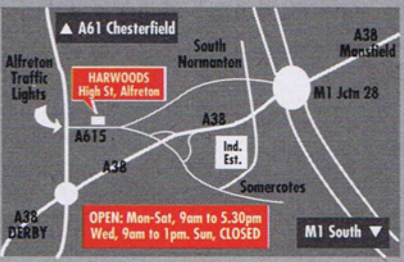


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mis'sion (mish'n) *n.* sending or being sent on some service.
miss'ile (-il, -il) *n.* that which may be thrown or shot to do damage.
car *n.* a wheeled vehicle; motor-car.
en'emy *n.* hostile person; opponent; armed foe; hostile force.
scum *n.* froth or other floating matter a liquid; waste part of anything; vile person or thing; riff-raff.
rock'et *n.* firework or stick that can be shot up in the air by igniting it's contents; automatically fired aid controlled weapon, armed and remote object.
fu'el *n.* (fū-) *n.* material for burning.
mer'cenary (-s-) a. hired; working simply for reward. - *n.* hired soldier.
arm'our, (us arm'or) *n.* defensive covering or dress; plating of warslips, task forces.
choose *v.t.* pickout, select; take preference.
weap'on (wep'n) *n.* implement to fight with.
carg'o *n.* vehicle's load, it's freight.
reward' *v.t.* pay, make return, for service, conduct etc.
Élité (–a-l–et') *n.* choice or select body; purvayor of video games; video games that will get better and better as time passes.
OVERLANDER *n.* wicked 21st century video game where mercenary completes mission by delivering cargo in a car for reward and uses reward from successful missions to choose fuel or armour and weapons including rockets and missiles to improve his car so that he can defeat scum in further more treacherous missions.

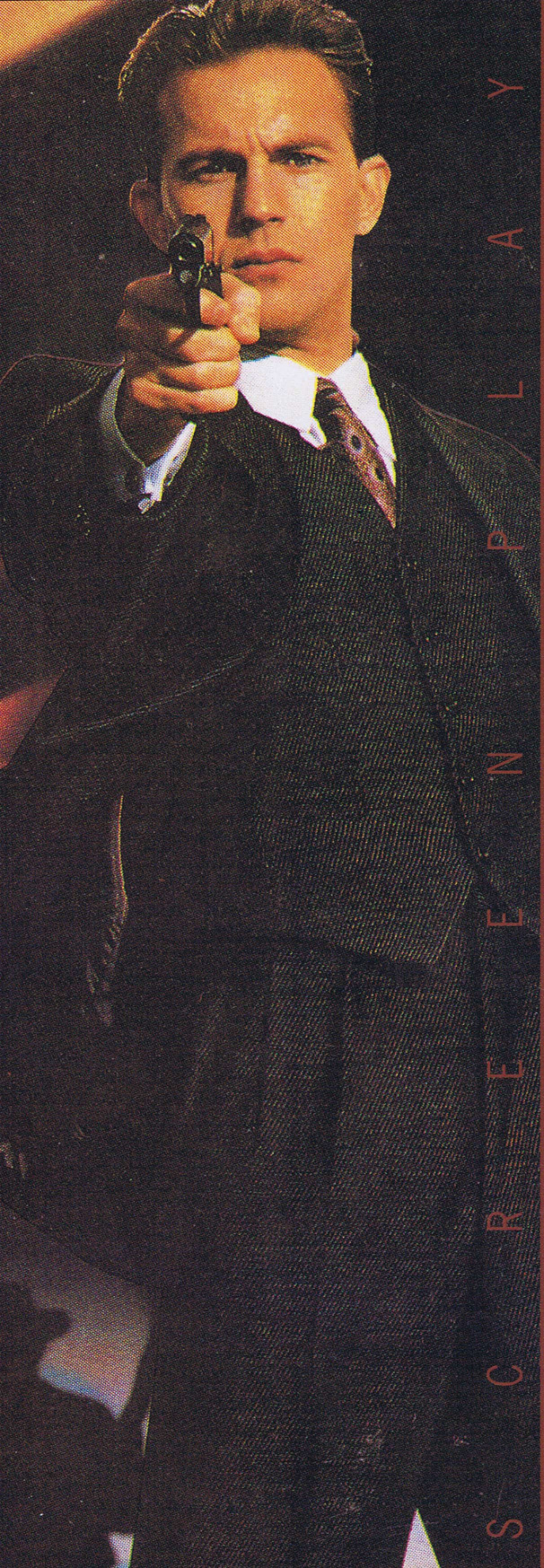




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TAKE ON THE MOB

After the success of *Batman The Movie*, can *The Untouchables* continue Ocean's current run of success? Turn the page to find the answer. You'll also find in the next 14 jam-packed pages that this month's Screenplay has less than the usual amount of coin-op conversions and film tie-ins. Original games are fighting back, it seems, and let us hope this trend continues. Tune in next month to see if the coin-op army make a counter-attack.



Can Gremlin follow up the success of *Switchblade* with *Super Cars*? p35



Infograme's RPG extravaganza *Drakkhen* arrives – can it pinch *Dungeon Master*'s crown? p50

THE RATINGS EXPLAINED

GRAPHICS
Good graphics are an important part of any game: if the power is there, it should be used to the full. Both static and moving graphics come under scrutiny in this rating, but remember, graphic wonders alone do not a great game make...

SOUND
With stereo capabilities the last thing you want to hear are Spectrumesque beeps, right? Title tunes and effects all add to the atmosphere of a game and good sound can greatly increase your enjoyment.

INTELLECT
How much real thought do you have to put in to play the game? Just because a game is mindless doesn't necessarily mean it's bad, but a game with a high intellect rating says immediately that you'll need to think to gain maximum enjoyment.

ADDICTION
How easy is a game to pick up and play? How much sheer fun will you get from it? Will you keep coming back? Important questions, all answered by a quick look at the Addiction rating.

OVERALL
A percentage mark that takes into account all the ratings, plus extras like lasting interest, documentation and packaging.

THE TEAM
There are two main *Amiga Format* reviewers: Andy Smith is an ex Spectrum owner who's been playing computer games for many years now and writing about them for almost as long, cutting his teeth on *ACE* before moving onto *Amiga Format*. Andy likes any type of game, from shoot-em-up to strategy game, from adventure to arcade conversion.

Maff Evans joined *AF* after doing sterling service for *Zzap! 64*, and he splits his time between playing games and writing reviews for us and our sister magazine *ST Format*. He's another solid all-rounder who's not averse to giving Andy the odd high score contest on the month's best games.

THE UNTO

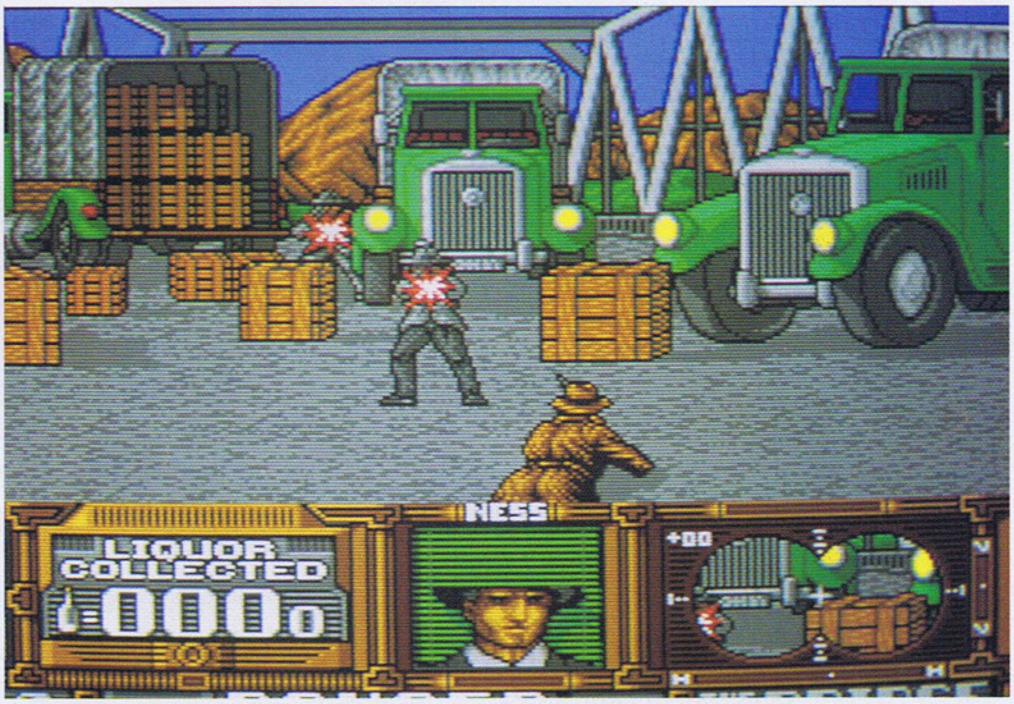
OCEAN £24.99



Ness



Malone



Level Two. Use the binocular sights currently located at the bottom of the screen to aim your shots at the baddies and at the bottles of booze.

GRAPHICS AND SOUND

Every stage and every section has been well designed and drawn and overall the game looks terrific. The different views for the different sections is a plus too and all the sprites are smoothly animated. The sound effects are also good, as is the in-game music, and you can toggle between the two at the press of a button.

LASTING INTEREST

This is a toughie – making it through each stage is a triumph in itself and it'll take ages to complete the game. It's also very frustrating at times but that just makes it more addictive. The six sections work


The Chicago Daily
MOB KILL NESS
IN STREET BATTLE
Blood Bath

well together and although they wouldn't stand up as games in their own right they help to make the overall package very satisfying.

Chicago during the roaring '20s was one hell of a city. Alcohol was banned, the Mob had their fingers in just about every illegal pie in town and the police department were finding it hard to cope. Action was called for and the FBI's answer was to create a bunch of crime-busters who had a free hand to use whatever methods they deemed fit to bring the situation under control. This bunch of characters was lead by Eliot Ness and were later to be known as The Untouchables.

As Eliot, it's down to you to lead the gang and go after the biggest fish of all: Al Capone. There are six stages to the game, the first of which is set in a warehouse where Al's hoods are busy bootlegging liquor. In this section of the game you control Ness in a sideways-scrolling shoot-em-up in which you have to blast away at not only the gangsters, but also Capone's bookkeepers. The aim of this section is to kill the bookkeepers and grab the pieces of evidence they drop.

You didn't think it was going to be that easy, though, did you? Absolutely not, because the place is crawling with baddies all of whom are armed with machine guns and all of whom shoot to kill – every hit you take reduces your health meter displayed at the base of the screen. To slow down this process you can pick up the violin cases dropped by the baddies when they're shot. As well as extra energy these cases can also contain extra ammunition and a time-based rapid fire benefit. Collect the 10 pieces of evidence and then you're into the next stage.

Here you're trying to prevent a liquor run that's taking place at the American/Canadian border. Again it's shooting action, but this time it's more like *Operation Wolf* as the baddies appear from behind cases and trucks in front of you. Shoot the baddies and the bottles of booze lying around and try not to take too many hits, then when you've scored enough points you'll go through to the next stage.

In an alleyway you now have four Untouchables to switch between and a set number of men

IN THE AVENUES AND ALLEYWAYS...



In the first alleyway on Level Three. With five more baddies to kill and only 10 seconds to do it in, things are looking tough.

UCHABLES



Wallace

Joystick or Keyboard



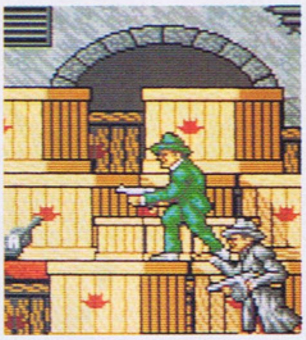
Shoot the guy with the brown coat on and he'll drop some evidence.



Stone



And there it is. Simply walk over it to pick it up.



At the top of the pile of crates, collect the violin cases that the baddies drop to gain extra energy, ammunition and so on.

to kill in a very short space of time, using only a shotgun. Should you manage the required number the next stage is just the same except from the other side of the alley (there are eight alleys in all, four from each side).

Next comes a viewed-from-above section of the game which is set in a train station where Ness not only has to shoot baddies, but also must guide a baby's pram through the station by nudging it gently past obstacles.

The penultimate scene has you trying to kill the last henchman who's taken a hostage before the poor innocent gets his brains blown out. Then you're into the final scene as you chase a baddie across the rooftops of the court where Capone is standing trial. ■

GRAPHICS	8
SOUND	7
INTELLECT	3
ADDICTION	8
OVERALL	87%

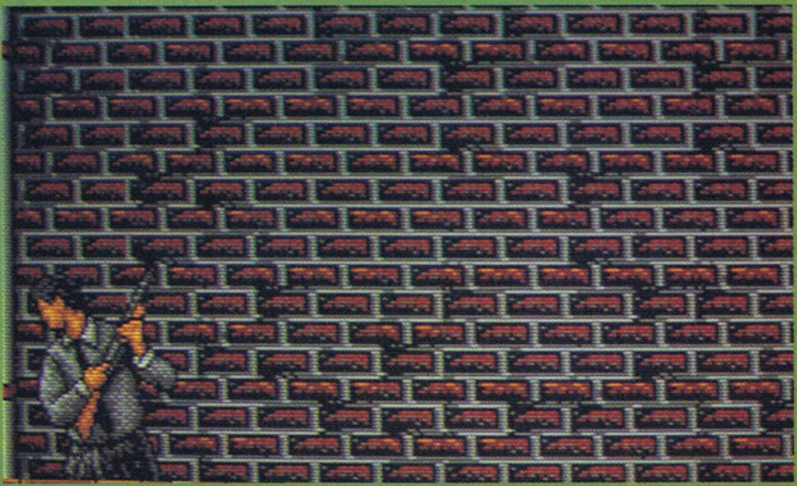
JUDGEMENT

The only minor quibble is the fact that there's an awful lot of shooting to be done. None of the levels are brilliant games in themselves, but put together they do work well and the overall effect is a brilliant translation of the film. It's not quite worth the Format Gold award simply because of a lack of variety on some levels. Still a goodie, and even if you didn't get to see the film, but you like a challenge, you'll enjoy this.

Reviewer Andy Smith



Left: The second alleyway on the third level and this time you're firing from the other side.



After every second shot your character is forced to duck behind the wall in order to reload his gun. Could cause problems...

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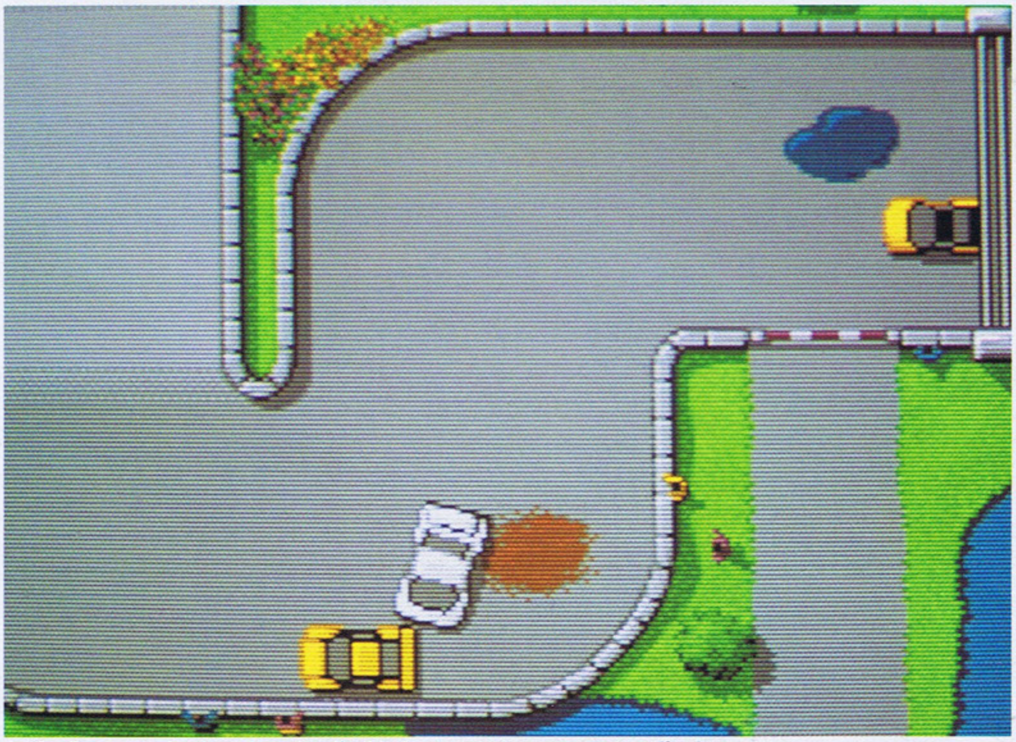
Superb animation, by the cartoonist whose brush gave us the Asterix movie, and beautifully executed graphics create a visual impact as yet unseen in the media of interactive entertainment. Ivanhoe – Fight for your life . . . and legend!

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In the Parsec trying to get past a disabled car you blew up on an earlier lap.

GREMLIN £19.99 ■ Joystick

SUPERCARS

Ferrari Testarossas, Porsche 944s, Jensen Interceptors, pah! They're all chicken feed compared to the cars in Gremlin's latest. Retron Parsecs, Vaug Interceptors, Taraco Neoroders and variants rule the roost here.

It's a single-player racing game, viewed from above, that gives you nine tracks to race on at three different levels making a total of 27 races. It's not solo stuff though: there are between three and seven computer-controlled cars to compete against for each race. You start against three and more cars join in as you move up the levels.

Before setting your wheels on the first track, though, you'll have to check out your equipment. You're given the basic Neoroder car to start with and new tyres, engine, body and a full tank of fuel. But as the season goes on all of these things become damaged - by bashing into the other cars, by skidding too much and so on - so before each race the gauges at the base of the screen have to be checked to see if you'll be able to survive the next race.

A race lasts a set number of laps, the number increasing as you step up the levels. If the race is long, your damage is high and things look dodgy, then pop into the garage and buy some new equipment. Note that improvements and repairs cost money and the only way to make money (and continue driving) is to complete each race in the top three and get some prize money. Coming first, obviously, gives you more prize money than coming third.



The Retron Parsec, top-of-the-range technology.

Win a couple of races and the coffers swell allowing you the luxury of buying some handy extras like a turbocharger for faster acceleration, power steering for a smaller turning circle and spin assist which points your car in the right direction after hitting an oil patch. Yes, oil, water and mud patches can all be found on tracks and all of them have detrimental effects on the speed or handling of your car. Then again, you could go for some down-right dirty tricks like front and rear missiles which, if aimed correctly, can knock a rival car right out of the race.

Start winning some serious money and it may be time to start thinking about a new car. A visit to the showroom before a race gives you the opportunity to select either the same type of car, but with a bigger engine, or a completely new model. There's even a chance to haggle with the dealer and try to knock the price down, but upset him and he'll throw you out of the showroom and not allow you back in until you've won another race.

Keep going until you fail to finish in the top three or until you manage to either blow the engine, tyres, or run out of fuel – easy to do if you don't watch your gauges closely and repair them between races. Then there's a full results service at the end of the game where two commentators give all the stats of who performed best on which tracks. ■

JUDGEMENT

It may not be an original idea but it's one of the best of its kind. Gremlin seem to be keeping up their new-found form of quality products, like Switchblade, which is pleasing to see.

GRAPHICS AND SOUND

The tune which plays throughout is fine, as are the skidding and bumping sound effects: they're not brilliant but they're certainly adequate. The graphics are much better: not only is the animation very smooth, but there's a high level of detail with things like shadows from bridges and trees included.

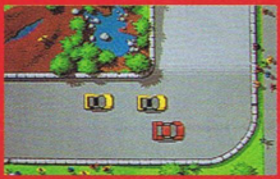


In the garage and buying a front missile should ensure a better placing in the next race.

LASTING INTEREST

It's not easy and the difficulty tuning has been set just right, making it highly addictive. The gameplay is great and it's fun to see things like loosing off a missile at one car, say on a bend, the car becoming a write-off and all the other computer-controlled cars bashing into it. With 27 races to win it's going to last you some time.

LET'S GO SHOPPING



Your nice shiny red Vaug Interceptor won't stay nice and shiny for long.



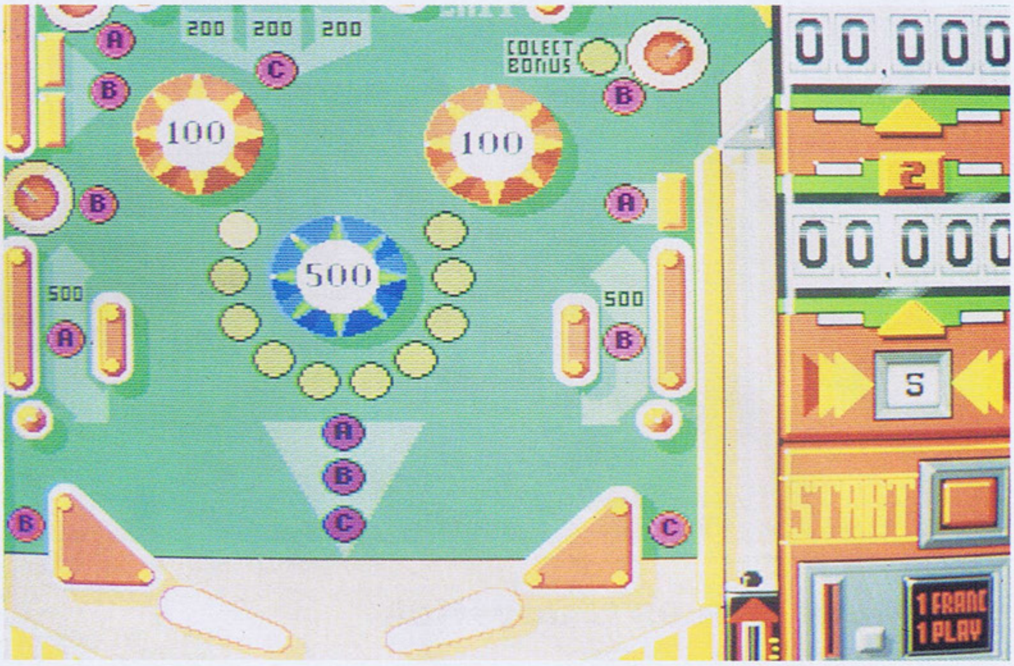
Into the showroom and it's time to start haggling for a new car.

GRAPHICS	8
SOUND	6
INTELLECT	4
ADDICTION	8
OVERALL	86%

Reviewer Andy Smith

PINBALL MAGIC

LORICIELS/US GOLD £24.95 ■ Keyboard



Curious things, pinball tables: you either love them or you hate them and if you love them, well, they're impossible to resist. Pin tables have not changed radically since the '50s when they first became popular: the electronics revolution had its effect, but the basics remain the same.

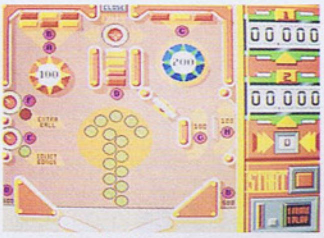
This latest offering from Frenchies Loriciel is a computer version of the popular arcade pastime. There are 12 tables in all, and the game is a mix between realistic tables, complete with bumpers and blocks to knock down, and abstract tables with breakout elements.

Starting with five balls each – two players can play each taking alternate turns – the idea is to work your way through the tables by lighting a series of lights (the exact number varying for each table) and then getting the ball through the exit at the top of each table. Fortunately, should one player manage to do this then both players will continue playing on the new table.

Of course, lose a ball between the flippers and it's gone for good, but there are ways to gain extra balls. One easy way is to work your way onto a new table, where you'll become the proud owner of five shiny new ones, or by getting the ball that's in play into a bonus hole or by knocking down a set number of bricks on certain tables. There are several other bonuses, but most are points based. ■

GRAPHICS AND SOUND

The ball movement is what it's all about, Brian, and fortunately the ball movement is spot on, being both smoothly animated and very realistic. The rest of the graphics are somewhat basic, but at least they're colourful. The clunks and pings and other spot effects are fine, but a bit of background music wouldn't have gone amiss.



The third table and now you have to light each letter individually (before, landing in an 'A' hole lit all the As – not any more).

LASTING INTEREST

If you don't like pinball simulations you won't be playing anyway, but if you do you'll find it's superbly addictive and with 12 tables to get through it'll take quite a while. Shame the high score table isn't saved to disk.

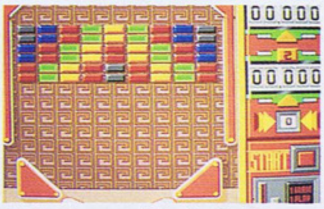
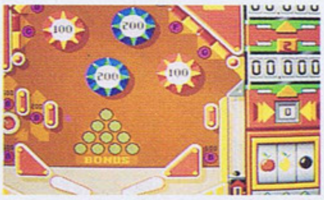


Table Four and the first of the Breakout games.



Notice the one-armed bandit reels in the bottom right? Just you try scoring a jackpot!

Reviewer Andy Smith

JUDGEMENT

Almost everything you could wish for in a real pin table has been included and the realistic ball movement and high lasting interest factor help to make this the best pin sim to have appeared to date.

GRAPHICS	7
SOUND	6
INTELLECT	2
ADDICTION	8
OVERALL	75%

PANDORA £19.99 ■ Joystick or Keyboard

OUTLANDS



The wave on the left has come up from the bottom and the thing on the right has come down from the top – sound familiar?

Just for a change, here's a vertically scrolling shoot-em-up for one or two players.

After all but wiping out humanity, the aliens are planning on coming back and destroying those few survivors who managed to escape to Mars. Attack is the only solution, so it's into your viewed-from-above space ship and the start of four levels of blasting.

As you might expect there is wave after wave of aliens to destroy, but your job is made easier if you can pick up some of the extra weapons amongst which are included twin fire and drones that shoot.

The graphics are fine, if a little basic, and though it scrolls slowly, the ships move well enough and everything is smoothly animated. Unfortunately, the gameplay is not so hot. When you're playing, it's hard to be gripped by that sense of urgency and you're just left feeling 'so what'. It's not very addictive even though the difficulty tuning has been set about right, and after a short time you'll be bored of it.

There's nothing glaringly wrong with this game: it's just that there are several others around that have much more to offer. ■

Reviewer Andy Smith

GRAPHICS	6
SOUND	5
INTELLECT	1
ADDICTION	4
OVERALL	51%

The P47 Thunderbolt was one of the American Air Force's best fighters during World War II. From 1943 onwards, P47s were based in Britain and were principally used for short-range sorties over northern France.

In this one or two player shoot-em-up, converted from the Jaleco coin-op of the same name, the player gets the chance to climb in the cockpit of one such plane and work his way through eight stages of mayhem.

It's a side-viewed horizontal scroller which moves slowly from left to right, where the player has to destroy not only ground targets, such as gun turrets and tanks, but also enemy planes which attack from all parts of the screen and usually come in waves.

You're armed with a front-firing gun initially but extra weapons can be collected by shooting the small helicopters that appear occasionally and collecting the symbols which they leave behind.

The power-ups that are available include bombs that fall from your plane every time you press the fire button – whilst still firing forwards as well – and spray missiles which fire from the front of your plane and then spread out in a fan formation killing anything they touch (very handy!).

Unlike most games of this ilk, the strength of your power-up is governed by the strength of the plane. Every time you collect a power-up your energy level increases, starting at one and rising to a maximum of four.

Your energy level determines the number of extra weapons that each power-up releases: for example if you collect a bomb power-up, one bomb is released for each level of energy, so you will find that you can have four bombs dropping out each and every time you press the fire button.

Note though, that once you've collected a power-up, collecting another will discard the first because you can not have more than one at once. The nice thing is that you don't loose the extra weapon when you lose a life, it just steps down a strength level.

Work your way through the stages (avoiding the scenery on some levels) and before progressing to the next level you have to destroy the end-of-level guardian which could be either a train, a battleship, a plane or a tank. Should you make it through all eight stages you can then go back and do the whole thing again at a higher difficulty level (of which there are four), which is where the simultaneous two player option comes in extremely useful. ■

GRAPHICS AND SOUND

The parallax scrolling on each level is good and the background graphics in general are excellent. The sprites are all well drawn and well animated and the game has ended up looking very much like its coin-op parent. The sound is limited to either 'on' when you get the standard coin-op tunes plus spot effects (explosions and the like) or 'off' when you get nothing at all.



That's you on the far left of the screen, in the middle of a heavy attack headed up by that large Heinkel-like plane.

P47

FIREBIRD £24.99 ■ Joystick or Keyboard

LASTING INTEREST

Like all shoot-em-ups, it has a limited life span. It's a goodie though, so if you really fancy a new challenge this is as good as anything that's around at the moment (and a lot better than some others).

DEATH FROM THE SKIES



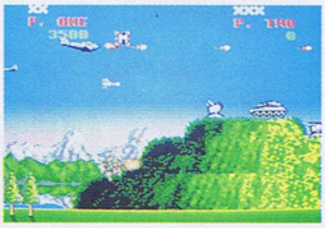
Bombing away at the first end-of-level guardian...



...and there he goes! Phew!



There's no rest for the wicked, though, as you're straight into the next level.



Collect the 'M' symbol to gain some extra missiles.



Another game and here you're equipped with bombs.



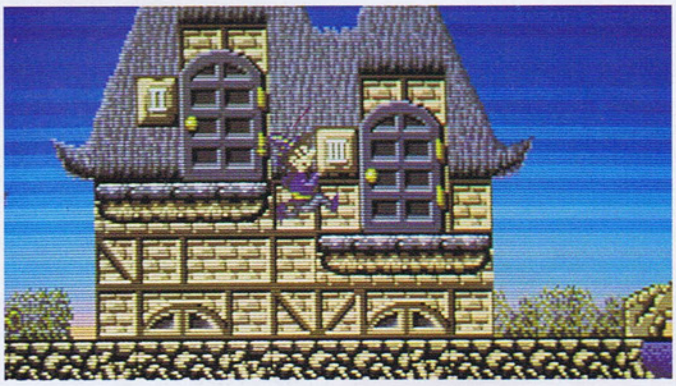
Later in the game you also have missiles to bomb and dodge: it's so annoying when you miss a power-up, like the 'T' bottom left.

JUDGEMENT

A nice example of the genre. It doesn't offer much new, but blast fans won't be disappointed and the two player option, as ever, makes for a lot of fun.

GRAPHICS	8
SOUND	6
INTELLECT	1
ADDICTION	8
OVERALL	80%

Reviewer Andy Smith



SEVEN GATES OF JAMBALA

GRANDSLAM £24.99 ■ Joystick

Everyone must know the story of the Sorcerer's Apprentice, of how the young student always caused trouble with his meddling. Dravion is a student similar to the one in the story. All he's ever wanted to be is a fully-fledged wizard, but he always manages to do something wrong and get into a terrible scrape. It's not really his fault – after all he can't really help being clumsy. But in the world of magic, innocent accidents can have serious consequences.

For too long Dravion ruined the Old Master's spells, making the wrong thing appear or creating spells of his own which caused no end of confusion. The Old Master told him that the next time he makes a mistake he'll be sent to the realm of Jambala. Dravion knows exactly how serious the Old Master is when he says this. He has often heard tales about the mysterious Jambala – of how even strong wizards enter the realm, never to return.

During the casting of his last spell, the Old Master was just at the climax of his incantation when Dravion accidentally leant on a lever which caused the spell to be ruined and the room to be plunged into total darkness. The last thing he remembers is the Master's voice muttering darkly and then blackness. Next thing he awoke in the realm of Jambala!

You must guide Dravion through the seven levels of this magical world searching for the one way that he can escape – the Great Wand. The seven pieces of the wand have been scattered throughout the passages of Jambala, waiting for a wizard to reconstruct them. Dravion must find these pieces and collect clues from creatures behind certain doors in the passages to help him rebuild the wand and escape.

The passages are guarded by a variety of strange creatures, all intent on keeping intruders like Dravion away. All the young wizard has to help him is a bag of magic spell dust to throw at his adversaries, but he can pick up extra weapons along the way. Also en route secret treasure is to be found – useful for bribing information holders or buying weapons. Dravion can find this by inspecting the ground with a hammer stolen from a dead wasp or fly. Yes, it is weird, but that's magic for you! ■

LASTING INTEREST

Even though the platform-based arcade adventure isn't a new idea, there are few enough on the Amiga to make them interesting. Grandslam's release manages to keep the style alive by presenting us with a good looking and playable game in a long-trusted format. It would have been very easy to ruin the idea by producing a simple run-to-the-right time after time banal game, but as US Gold proved with *Ghouls'N'Ghosts*, as long as it's done properly, platform games can be fun.

GRAPHICS AND SOUND

For such a young company, Thalion have done themselves proud by programming a slick and well polished game with small but well-defined sprites,



Your last chance to get hold of a power jump at last year's price.

haunting soundtracks and impressive presentation screens. The game's atmosphere veers wildly, due to the contrasting tunes and graphic styles – from the cute "Wizard of Oz" town scenes, through wondrous gold treasure caverns to murky underground passages filled with horrible monsters. Some of the dungeon creatures offering bargains are a little quirky, but fit into the general appearance of the game nicely nonetheless. A good start for these young designers!

JUDGEMENT

***Seven Gates of Jambala* continues the tradition – not to quite as good effect as USG but admirably enough – and manages to hold its own against the current glut of coin-op conversions. If you like a bit of wizardry and fancy a change from 3D racing or alien blasting then give *Jambala* a try.**

Reviewer Maff Evans

GRAPHICS	7
SOUND	6
INTELLECT	4
ADDICTION	7
OVERALL	79%

KENNY DALGLISH SOCCER MATCH

IMPRESSIONS £19.99 ■ Joystick

GRAPHICS	4
SOUND	3
INTELLECT	2
ADDICTION	4
OVERALL	31%

There's still everything to play for... let's see if this young striker can put the ball in the... err... back of the net.

Here's the second in the planned trilogy of Kenny games – the first was a management game and the third is based on the struggles a young man faces as he works his way up in his soccer career.

It's a pure arcade game for one or two players, though four people can also play making up a league, that follows the standard format: the player controls one footballer at a time, the current player highlighted with an arrow. Passes and shots are made by holding the fire button down while moving the joystick to one of nine positions once you've got possession. The pre-match options are limited and allow you to do little more than decide the length of each half and name the teams.

What really lets the game down, though, is the appalling gameplay. Knowing when you've got possession is difficult enough but trying to execute a pass or a shot is frustratingly awkward. The game has two speeds: normal and fast, and only at the fast speed does it come anywhere near the acceptable speed for this type of game. In normal mode the players all move as if they're wading through three feet of water.

The graphics are basic, the sound effects are awful and the gameplay is sorely lacking – so yet another win for Anco's *Kick Off* in the best footie game league.



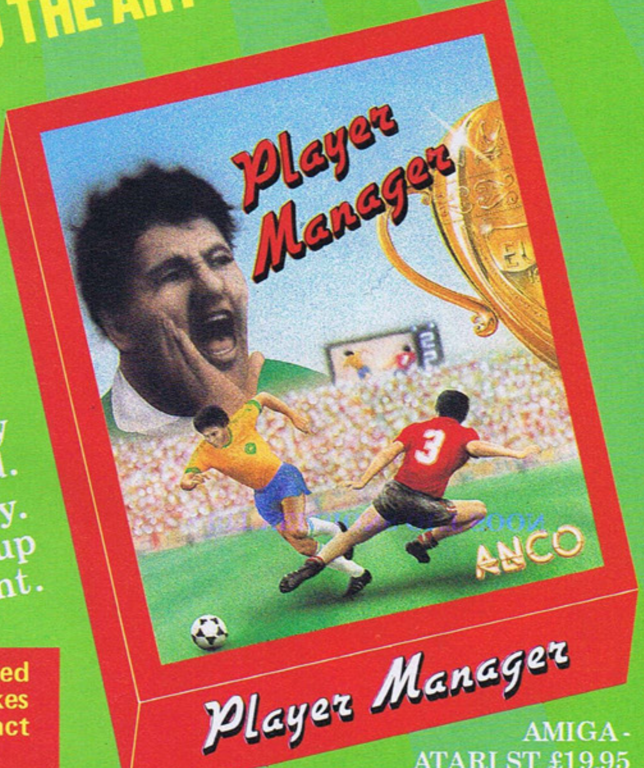
Reviewer Andy Smith


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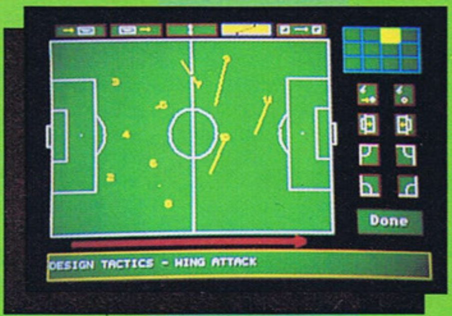
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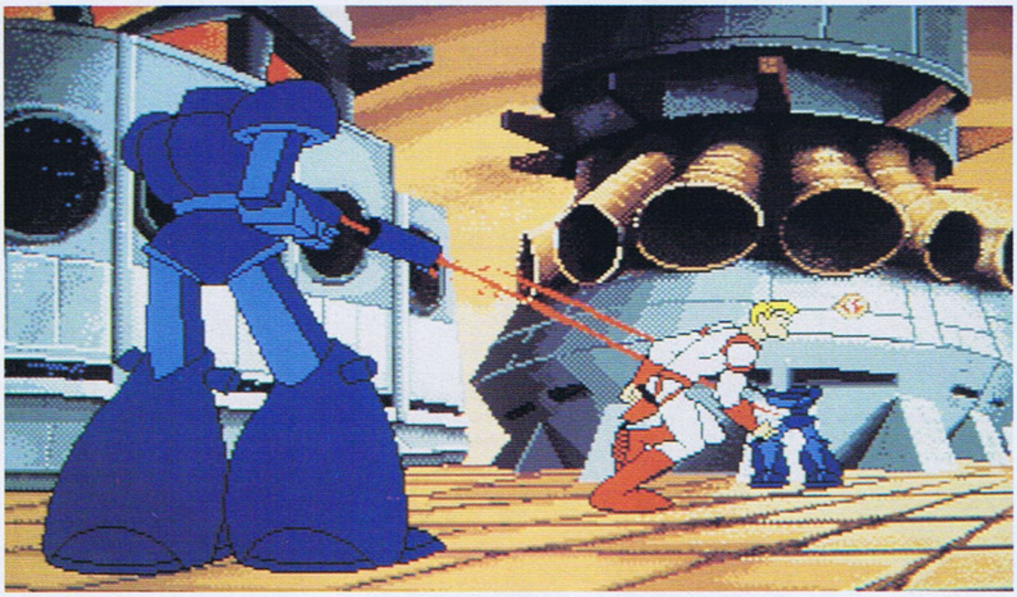
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Caught between two laser weilding robots, ulp!

SPACE ACE

READYSOFT £44.95 ■ Joystick

A few years ago a strange coin-op machine hit the arcades. Instead of the usual blocky aliens and ping-beep sound effects it featured state-of-the-art, Disney-style animation and hi-fi sound effects. Hordes of people came forth with their 50p pieces to be totally confused and die on the first screen. Soon enough, the game was written off as a gimmick and only crops up when players say "Do you remember *Dragon's Lair*?"

More recently, Don Bluth – the man responsible for *Dragon's Lair* – came up with *Space Ace*. Although in a similar vein to the medieval original, the futuristic romp had a good deal more playability than it's predecessor. Now thanks to Readysoft, even those without the requisite number of coins, but with plenty of notes, can play in their homes.

The plot is a little on the strange side, but isn't that the point of cartoons? Borf, a nasty alien tyrant, has concocted an ingenious plan to take over the Earth – he's going to zap every human being with his Infanto Ray, which turns adults into children. Only two people can save the Earth, Space Ace and his beautiful friend Kimberly. Unfortunately, just as they approach Borf's ship, they get hit by the Infanto Ray, turning them into children before they can overpower the foul oppressor. As if that wasn't enough, he's also kidnapped Kimberly! Now Ace is back to his youth as Dexter, he must summon up all his mettle to go and rescue Kimberly and defeat the evil Borf.

For anyone not familiar with Don Bluth's 'interactive cartoons' the gameplay consists of making decisions on the main character's actions by moving the joystick at the appropriate time. Play begins on the cliff overlooking Borf's ship, where Dexter must dodge Borf's laser blasts, and continues through the rocky sections of the planet, past stomping robots and tentacled pit creatures into Borf's ship itself. The ship contains all manner of alien hazards, such as guard dogs, guard robots and automatic defence systems.

Eventually, Dexter returns to his powerful adult form and confronts Borf in a deadly hand-to-hand battle with laser staffs. Ace must defeat Borf before escaping with Kimberly. ■

Reviewer Maff Evans



Yet another disaster avoided - a second later and you'd have plummeted to your death.

LASTING INTEREST

Even though *Dragon's Lair* had superb animation and sound, the gameplay was so disjointed that players soon lost interest. Pressing a button every third screen or so wasn't exactly entertaining. Most screens only have one or two moves to be carried out, so they aren't too difficult to learn. The inclusion of a Save Game feature means that reaching the end of the game is a little on the easy side.

GRAPHICS AND SOUND

***Space Ace*'s audio-visual delights are without doubt some of the best to be seen on the Amiga. The pictures look to have been taken directly from the original artwork, giving an appearance more akin to a Disney cartoon than a computer game. Every screen has been exceptionally well drawn and smoothly animated with cinema quality music and spot effects to back the frantic action. Occasionally, you forget to carry out a move just because you get carried away watching the cartoon! The only way an Amiga game can improve on *Space Ace*'s graphics is to use full colour digitised photographs to portray the action throughout and we all know how that gobbles up the memory – we're talking ten disk games here!**



The start of the game and timing the jump behind that rock on the right is crucial...



...well, you survived that, so onwards you may go.

JUDGEMENT

Don Bluth has improved the format since the first game, making the game run much more smoothly and giving the player much more to do. Despite the fact that *Space Ace* is superbly presented and the gameplay has been improved, the amount of interaction between the cartoon and the player is minimal. The fact that the game can be completed too easily means that all you're left with after three or four days is an expensive four disk animation demo.

GRAPHICS	9
SOUND	8
INTELLECT	3
ADDICTION	2
OVERALL	62%

BATTLE WITH BORF



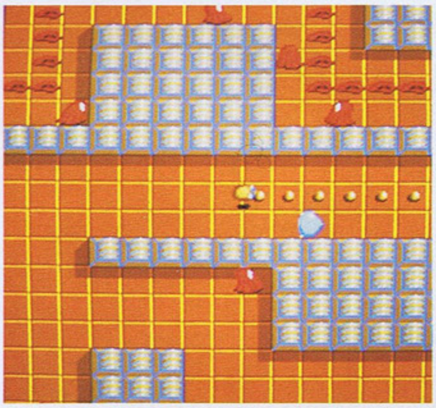
Battling with Borf. That stick he's got is not as innocent as it seems...



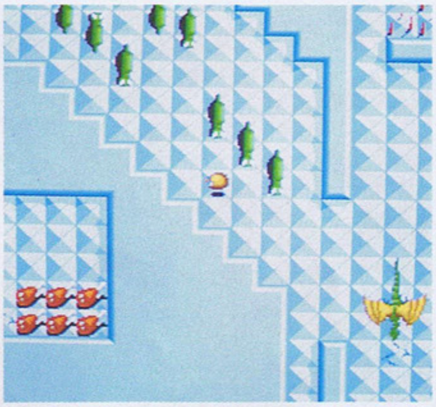
...as you can see!



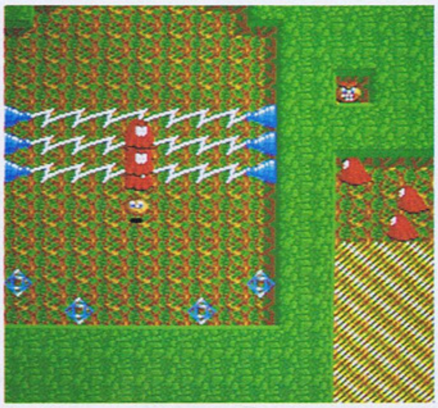
A well timed jump at the vine gets you clear of him.



Collect all the pills and you will be able to go to the next level.



Just how are you going to get to those hams in the bottom left?



Bouncing across those power lines sure sends your health points plummeting!

UBI SOFT £24.99 ■ Joystick

SUPER PUFFY'S SAGA



Keep out of the dragon's breath and collect that key at the bottom of the screen to get into all those health giving hams!



Eek! More fire to avoid, and this time ghosts complicate the situation.

Right, let's get the bad jokes out of the way..."This game is about a load of old balls! Haw haw!" Well that's where you're wrong, because Puffy and Puffyn are young balls.

One day, while on an excursion, an evil wizard lured them to his castle, turning them from careless young lovers into small bouncing balls. As if that wasn't enough, he's also trapped them at the bottom of a series of labyrinthian dungeons. Ooh, the rotter. You must guide the young hero or heroine (depending on your choice) through these dungeons so they can crack the spell and return to their natural shape.

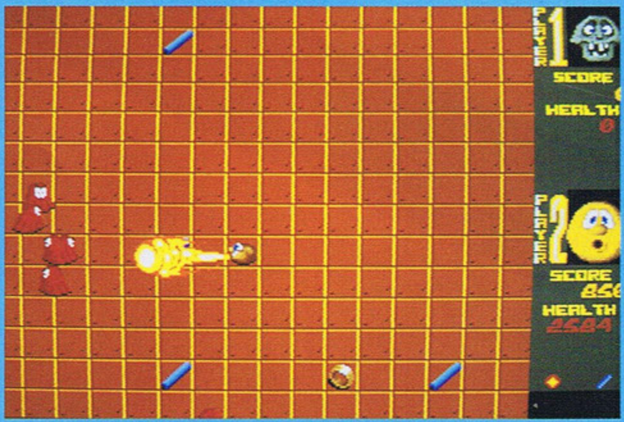
This isn't as easy as it sounds, since there are many hazards to watch out for, including spiked floors, electric guns and sticky floors. There are also all manner of strange creatures wandering around the dungeons who have been warped by the wizard's evil mind and are on the hunt for any strangers in their world. Creatures such as snakes just crawl up and down the corridors and are easy to avoid, but other beasts like fire-breathing dragons and ghosts that follow your every move, cause many more problems.

You are not totally defenceless on your quest though, as the spell has also given you the ability to fire a puff of deadly gas from your lungs. This can be made more powerful by picking up power tokens or spells to give you fiery dragon-breath (time for a squirt of mouth freshener).

To finish a dungeon and travel to the next level, Puffy and Puffyn must collect enough 'Goms' to open a portal. These can either be found lying around on the floor or in chests opened by gold keys. Chests can give spells such as invisibility, speed, immunity or viewing the dungeon using ESP. ■

GRAPHICS AND SOUND

The overall feel of Super Puffy is very similar to the classic maze game Time Bandit. Many of Bandit's elements have been included, such as weird landscapes and comical creatures, with a liberal dash of the old Gauntlet backgrounds. In fact the whole thing looks somewhat dated, being similar in looks and sound to arcade adventures seen on the Amiga two or three years ago. In that case, why does it work for this kind of game? Mostly because the smaller sprites give the player a feeling of space in the dungeon, leaving the larger and more impressively animated creatures to give a greater impact later in the game. Unfortunately, the sound doesn't match up to the standard set by the graphics, consisting of the odd sampled effect in the midst of a whole batch of weak "plip-plip" effects and annoying phrases, particularly the unhelpful "Puffy, you will die!" I KNOW.



Revenge! Now it's your turn to get the ghosts.

JUDGEMENT

Perhaps the programmers have tried to detract from the lack of game content by going overboard on the peripheral presentation. Well I'm sorry guys, but it doesn't really work! There's a lot of levels to play and they won't be easily beaten but this sort of game looks decidedly dated now.

Reviewer Maff Evans

GRAPHICS	7
SOUND	5
INTELLECT	4
ADDICTION	4
OVERALL	57%

LASTING INTEREST

Wandering around the mazes is great fun to start with and the fact that the first couple of levels are easy to solve instils a certain confidence, but the gameplay gets too hard too quickly. After the "obvious route" solutions of the first three levels, the game becomes incredibly hard, throwing things at you from all directions so that you can't even make it around the next corner, never mind the end of the level. Soon enough, the feeling of frustration takes over the compulsion to see higher levels, especially when you have to sit through the ever-so-slow outro and intro sections – all seven sections of it!

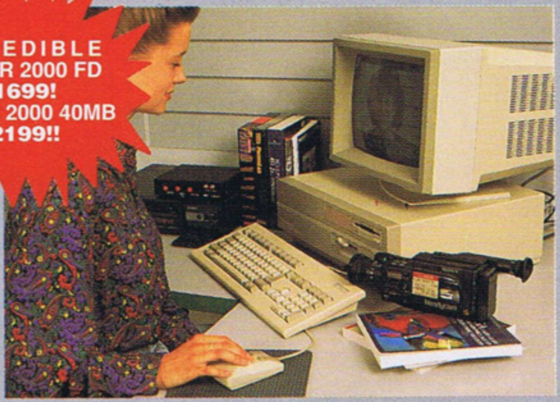
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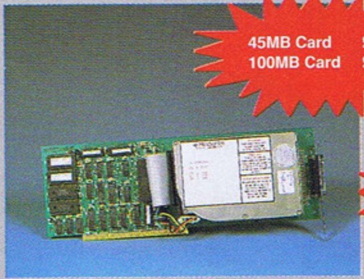
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TAPESTORE £799

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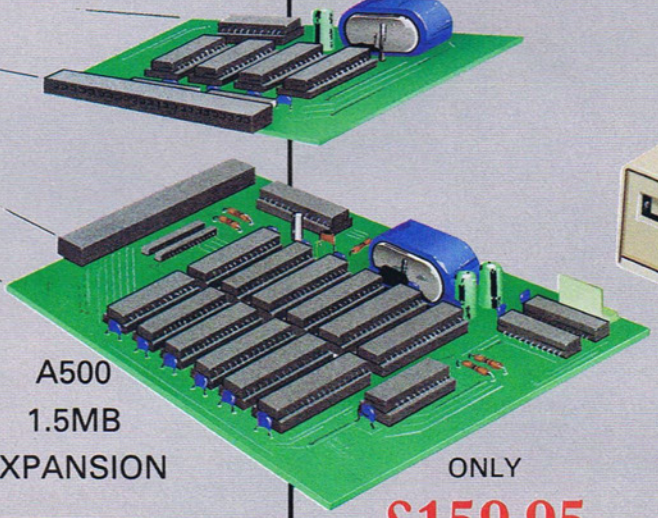
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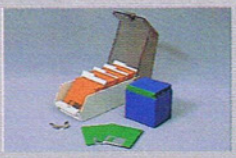
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BAD COMPANY

LOGOTRON £24.99 ■ Joystick

The Bad Company in question are a bunch of eight soldiers born and bred just to blast baddies. The baddies that need destroying this time are a load of insectoids who are inhabiting four worlds – four worlds that we want to inhabit, so they have to go, and the Bad Company have been called in to 'persuade' them.

It's a one or two player shoot-em-up with it's roots firmly based in *Space Harrier* (that is, your character is at the front of the display and all the baddies run from the back of the screen towards him). Before starting out, you first have to decide which of the eight you'd like to be, as each character has abilities that are peculiar to him: so some can carry heavy weapons but are none too agile whereas others can move around swiftly, but aren't strong enough to lug the big weapons about.

Once you've decided on the character, you can then choose which of the four planets you want to start on and you're beamed down. From here on in it's just a case of running along, blasting absolutely anything that comes towards you and trying not to take too many hits because each one leaves a chunk missing from your health meter. Once the meter reaches bottom you lose one of your four lives. Fortunately, your health will repair itself gradually, but the way things go you're often unable to sit around waiting for it to recover before you're thrown into the fray again.

You guessed it, there are tougher-than-average baddies to be encountered along the way and the best way to deal with these is to pick up the extra weapons that are dropped down from the orbiting mother ship – you start the game with two weapons, which can be switched between at the touch of a button. Clear the planet of aliens and you can then move onto a tougher one, with a bigger points bonus should you manage to survive it. ■


Simply shoot the spheres!

GRAPHICS AND SOUND
Everything is smoothly animated and fast, but the sprites are not particularly well drawn: they look a lot better when they explode. The backgrounds and the floor are fine, but a little dull. Sound is OK as far as it goes: you get a couple of jaunty tunes and some nice spot effects.

LASTING INTEREST
Pure blasting fun – best in two player mode. It doesn't have the impulsiveness of *Operation Thunderbolt* and it lacks variety too. It's quite tough, though, so it will certainly take you quite a while to complete.


Top: Running along blasting away at the insectoid nasties. Switch weapons by hitting the space bar. Above: You've taken a hit and your energy has suffered as a result.

Reviewer Andy Smith

GRAPHICS	7
SOUND	6
INTELLECT	1
ADDICTION	7
OVERALL	71%

JUDGEMENT
Simple blasting fare that's fun for a while but soon becomes tedious. It is addictive at first, however, and although it's not as much fun as something like *Operation Thunderbolt* or *Space Harrier*, it will nonetheless keep you entertained and playing for a reasonable while.

5TH GEAR

HEWSON £19.99 ■ Joystick

More car-driving antics, this time in a viewed-from-above job from Hewson. You're taking part in a series of illegal races during which you have to race up the screen, avoiding the boulders and ditches that crop up as you drive along, in order to reach a sign that says 'Turn Here'. Then you have to turn around and drive back along the course – all within a time limit.

There are also enemy cars to avoid or destroy with your front firing gun. For every kill and race completed you earn yourself money which you can spend in the shops found along the way, on such goodies as missiles, turbo boosts and even helium tyres that will allow you to jump further.

Graphics are basic, sound is awful and gameplay is not much better. It's not difficult to play but control is frustrating and the task is dull, so you'll have to be dedicated to play to the end. *5TH Gear*? It just gets out of neutral...

GRAPHICS	5
SOUND	3
INTELLECT	1
ADDICTION	4
OVERALL	42%



On the first race, pull into the station to get some more fuel, but remember the clock!

Reviewer Andy Smith

FULL METAL PLANET

INFOGRAMES £24.99 ■
Mouse and Keyboard



The strategic map which shows the whole planet and which can be called up at any time.



Deploying your forces. That's the Hen about to be dropped.

LASTING INTEREST

With four players (any combination of human and computer), this game can get to be very enjoyable. Even in solo mode it's fun, but after a few games the seasoned strategist wiil find it too limited to hold the attention. The single-planet scenario does tend to limit the lasting interest too: it's simply not big enough to provide variety.

GRAPHICS AND SOUND

The planet is viewed from above and the graphics are fine: they could not be called outstanding, but they are functional for this sort of game. Forget about the sound: there simply isn't any.



The Hen has now collected a lump of precious ore...



...and instantly makes the metal into a handy tank.

JUDGEMENT

A jolly nice, simple, tactical game that can be great fun to play – especially if you are lucky enough to persuade two or three chums to join in the fun. It's easy to get into in the first place, but the only thing letting it down is the rigidity of the set-up (the fixed number of turns, having only the one planet and so on).

Apparently the board game of which this is the computer version, was in existence long before Stanley Kubrick made the film with the 'Full Metal' prefix.

It's a one to four player strategy game set in the future, where up to four spaceships have landed on a planet containing a plentiful supply of a precious metal ore. Every player wants the ore, so it's time to fight. The overall objective in the game is to blast off at the end of 25 turns with as much ore on board as possible.

The game is played in turns, and the first couple of turns are dedicated to deciding first where to land your spaceship and then where to deploy your forces, which include five tanks, two ships and two curious pieces of hardware. The first of these curios is called The Crab and this is the machine that collects the lumps of ore that are found on the surface of the planet and returns them to the mother ship. The second piece is known as The Hen and this can not only collect and transport ore, but it can also build new pieces of equipment, so it can wander about picking up ore and turning it into pieces of hardware.

Movement of pieces during the game is restricted by two factors, the first and most important being the number of action points available at the start of the turn. Initially, each player only has five points so little can be done. From turn five until turn 21 (at which point the player can opt to blast off if he wishes) the points increase up to 25, so a lot more things can be accomplished – like blasting your adversaries or capturing their pieces of hardware – especially if you save some of your points and have a bumper lot for the next turn. Attacking your enemies is a curious matter: for starters, you must get at least two of your pieces in range – two hexes – and each piece can only fire twice per turn.

The second major movement factor is the tide. Each turn portions of the planet become either submerged or exposed as the tide rises and falls which can leave your pieces stranded and unable to move for at least a turn.

The winner of the game is the person (or computer player, of which there are six with varying levels of aggressiveness) who manages to survive to the end and also has the most ore collected and pieces remaining. ■

Below: The set-up screen. Here, there is one human player to take on three computer ones.



Reviewer Andy Smith

GRAPHICS	6
SOUND	N/A
INTELLECT	8
ADDICTION	6
OVERALL	75%

CRAB PASTED



Two pieces move in for the kill on a Crab – and it most certainly looks like the end of the line for him.



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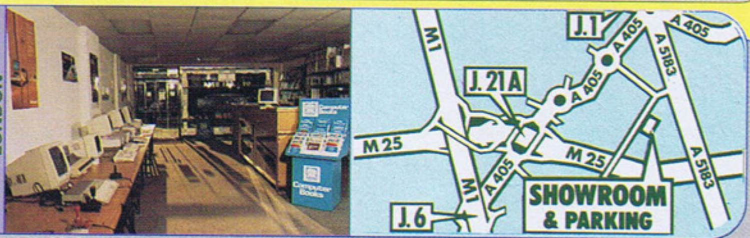
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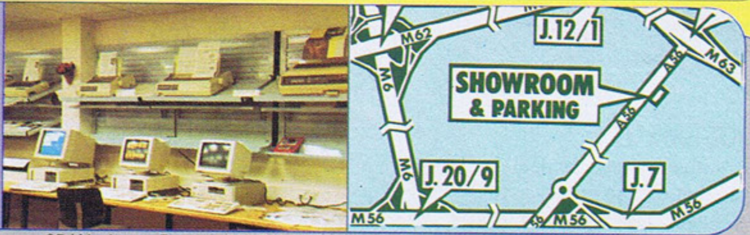
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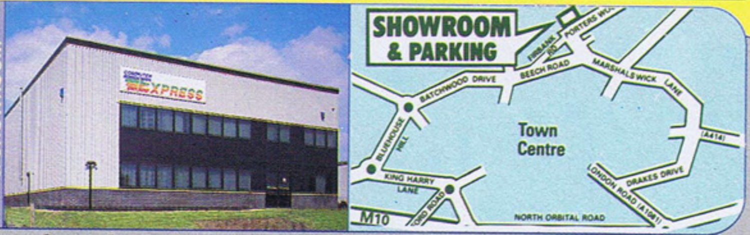
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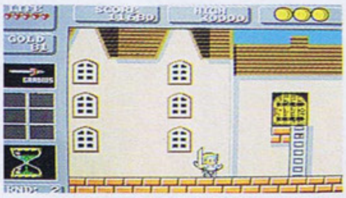
SUPER WONDER BOY

ACTIVISION £24.99 ■ Joystick and Keyboard

GRAPHICS AND SOUND

As is usual in games of this type, the graphics have attempted to be cute and cuddly rather than realistic. To be honest, the designers have succeeded in doing this, but it would have been nice to have "cute and cuddly" on a larger playing field. Most of the screen is taken up by the display panels, not leaving much space for the game screen.

The sound also lets the side down, as it consists of extremely weak beeping soundtracks that fail to add any atmosphere whatsoever. It looks as though the game hasn't been programmed to make use of any of the Amiga's features, which for a £25 game is rather annoying.



In the shop and on the receiving end of some sound words of advice.

Occasionally, arcade games veer away from the space shoot-em-up or racing simulation, and appear with some of the silliest plots imaginable. One of these games popped up several years ago, placing the player in control of a nappy-clad, adventuring toddler carrying out tasks that would make a muscled docker flinch.

The game was, of course, *Wonder Boy*, and proved such a success that Sega came up with a sequel: *Super Wonder Boy*. This time the hero no longer seems like a frightened toddler struggling to stay alive. Oh no, this time the courageous adolescent is kitted out with sword and armour. He has a quest to undertake and, moreover, despite his diminutive stature he can bally well do the job too!

Tom-Tom (our junior hero) must enter the realm of Monster Land, home of the vicious Meka dragon. For too long the scaly tyrant has dominated the poor frightened folk of Wonderland and it's about time something was done. Enter one fully-armed sprog, who you control on the start of his journey into Monster Land.

First stop is a local wizard's hut, where you are kitted out in the latest line in adventurers' tin fashions. Then it's time to tackle the terrible tyrant's terrifying tools of termination (that means monsters), such as snakes, giant squid and the evil Red Knight (gasp)!

Not all the inhabitants of Monster Land follow the Dragon ruler's lead, however, and additional help can be had from various store owners and inn-keepers, who are only too happy to let you have some additional gear or information provided that the price is right. You can pay them for their services with gold, gained by finding secret locations or by killing the Monster Guards.

To get to the Dragon himself you have to kill off his guardians in a one-to-one battle and steal the keys to the gates that divide Monster Land. ■

LASTING INTEREST

The game starts off quite easy, then gets very hard very quickly, causing you to die somewhat abruptly. As in the arcade version there is a continue play option, but the Amiga version only allows you a maximum of three credits. It also includes the annoying feature of not giving you the chance to finish after one credit, so that your score resets to zero, which means that there is no way to keep your high score. That may seem petty, but once you've completed the adventure (which, incidentally, shouldn't take THAT long), what is there to keep you playing if you can't obtain a high score?



Aargh! A nasty ghost to do battle with (still, you are a wonder boy so he really shouldn't prove to be of too much trouble to you).



Meanwhile, on another level... This time you are lucky enough to find another shop, located at the top of the stairs.

JUDGEMENT

It seems that *Super Wonder Boy* is another in the sadly increasing number of games that has simply been ported over from the first conversion, so that none of the features that make Amiga games stand out are included. Activision have supplied us with some top-rate games recently, including arcade conversions, but unfortunately *Super Wonder Boy* misses the mark by a considerable distance.

GRAPHICS	6
SOUND	2
INTELLECT	2
ADDICTION	3
OVERALL	51%

Reviewer Maff Evans

PURSUIT TO EARTH

EXOCET £19.95 Joystick

Remember that ancient arcade game *Gyruss*, in which you travelled from planet to planet destroying aliens by whizzing around the edge of the screen? Well, Exocet have released a 'new' game similar to this ageing coin-op.

The plot remains the same, in that you have to travel around the solar system destroying the invading alien forces, your eventual destination being good ol' Mother Earth, although the planet Platblat doesn't appear to be in the *AF* textbook of the Solar System! The graphics are more akin to 'classic' shoot-em-up *Arcadia* than a new 16-bit release, being flat and blandly coloured with a noticeable lack of animation. The sound is of an equally poor standard, consisting of a few badly-sampled spot effects and an incredible use of the old 'silent theme tune' trick!

The gameplay is annoying in the extreme. Your ship slows down when a lot of aliens appear on screen, meaning that it's easier for them to kill you, and the 30-second delay between lives urges your finger towards the OFF button. Take my advice – don't stop the finger! It knows what it's doing!



Collect that blue pod as it flies toward you and you'll gain a power-up.

GRAPHICS	1
SOUND	1
INTELLECT	1
ADDICTION	0
OVERALL	19%

Reviewer Maff Evans



Another game and a dragon to fight. Time to run away?

DRAKKHEN

INFOGRAMES £29.99 ■ Mouse and Keyboard

In another world and another time a strange island once appeared. This island is home to eight (or is it nine?) dragons that have returned after a long slumber to rid themselves of a very annoying thorn in their sides: mankind.

Eventually the only course of action became clear: four adventurers would have to travel to the island and defeat the dragons in order to steal the magical stones set in their foreheads and thus ensure mankind will be free from the threat for once and for all.

You're going to be leading the party, so the first thing to do is decide just who should go and what their attributes should be. A fighter would be a good idea, so would a magician, but how about a priest (or priestess)?

Once you think you've got the right mix you can worry about their strength levels and so on, which are generated randomly and range from one to twenty. This is just a simple process of deciding which number you're happy with for the particular attribute, then moving on to the next. The easy option, though, is to use the default team, which is made up of a person of each profession, but this does mean you won't be able to save the game as you're playing.

Moving during the game is divided into two major modes. The first is individual mode, where your characters are all on screen and by pointing and clicking with the mouse pointer one character can be directed about the screen (the character currently under control is highlighted to the left of the playing window). This is the main movement mode whenever you're inside a building - handy for picking up objects that are found lying around - and for when you have to engage in combat.

The other movement mode is for travelling about the island and simply involves hitting the return key, at which point all the characters walk towards the front of the screen and fast movement around the lands can be achieved by using the cursor keys. ■

JUDGEMENT

This game takes work to get the most out of. The blend between adventure and action works but it's not brilliant. Shoot-em-up fans and anyone not wishing to work at a game should steer clear, and even fans of the genre may find it's not the best of its type. Dungeon Master is still the best action/adventure to have appeared.



Before setting off properly, though, it's a good idea to equip your party.

GRAPHICS AND SOUND

The sound effects are terrific and very atmospheric. The graphics are also very good and it's nice to see such a high level of attention to detail: for example, get a member of your party to take some armour out of his or her backpack and put it on and the picture at the side of the screen will show him or her wearing it, as will the sprite when in individual move mode. Inside buildings all the rooms are highly detailed and outside everything moves very swiftly when you're travelling around.



In individual mode. Move the pointer around the action window and the highlighted character moves to the selected spot.



With two party members dead things look bleak.

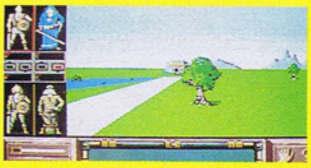
LASTING INTEREST

Should you decide not to bother creating a game save disk, you'll spend hours trying to get through the game. Even when you do create a disk and 'cheat' by saving the game before entering a potentially difficult situation you'll find the game takes a long time to play. Get involved with the game and it'll keep you busy for a long time.

Reviewer Andy Smith

GRAPHICS	8
SOUND	7
INTELLECT	5
ADDICTION	6
OVERALL	73%

DUNGEONS AND DRAKKHENS



In group mode. Use the arrow keys to move about the countryside.



A castle to explore, if you can get past the shark in the moat!



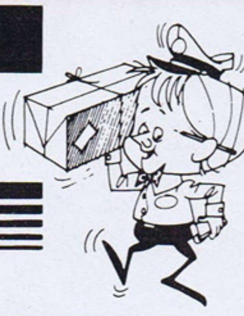
You did, but how are you going to turn off the force fields shielding the doors?



After a scrap, the spoils of war.


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AUSTERLITZ



Looking north from Napoleon's position. Getting battle reports from your subordinates is the best way to keep track of how things are developing.

December 2nd 1805 and Napoleon's Grand Armee have called off the planned invasion of Britain due to the threat imposed by Austria, Russia, Sweden and Britain who comprise the Third Coalition. The French march their way into Austria and after winning a series of decisive victories are preparing for yet another confrontation with the Austro-Russian forces.

That's the state of play at the start of this one or two player wargame, one that allows the player to rewrite history as either Napoleon commanding the French or Czar Alexander I commanding the allied Austro-Russian forces.

This is the second of the PSS games designed by Dr Peter Turcan. They differ from most wargames in their attempt to be as realistic as possible – only allowing the player to see the battlefield from the eyes of the Commander-in-Chief.

Once you've decided whether to play as Napoleon or Alexander, take command: the orders you issue are sent by dispatch rider to your corps commanders, who in turn order the divisional generals to move their infantry, cavalry and artillery units. All of your subordinates have their own intelligence and the player is rarely concerned with the decisions made by regimental commanders at the lowest level of command.

The orders you're able to issue vary in complexity from vague commands like 'Soult, attack the Pratzeberg' to things like 'Lannes, at 12 45pm order 3 infantry divisions to defend Santon Hill'. Once you've decided which orders to issue (eight per turn, each turn lasting 15 minutes) the orders are sent by messenger to their destination. Obviously, the further away this is, the longer it's going to take the orders to get through (if they do at all, because riders are just as prone to getting themselves killed as anyone else). And that's the crux of the game, keeping tabs on what your subordinates are doing and reacting to situations, very often before they can actually occur. ■

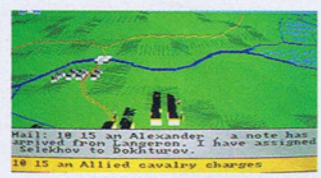
GRAPHICS	7
SOUND	N/A
INTELLECT	8
ADDICTION	8
OVERALL	91%

GRAPHICS AND SOUND

The last thing you want in a serious wargame is sound, so there isn't any. The 3D graphics, however, are great. It takes a short while for the screen to update each time, but the delay is not too bad. There's an option to see the cannons firing, which is a nice touch, but most of the time you're looking at the blocks that represent the various units.

LASTING INTEREST

To familiarise yourself with the game system and, indeed, to get used to the tactics used in Napoleonic warfare, you can select to view the action through the eyes of corps commanders and major landmarks – very handy. Though there's only one scenario, it's a tough one to win – especially if you play as the Czar against the computer.



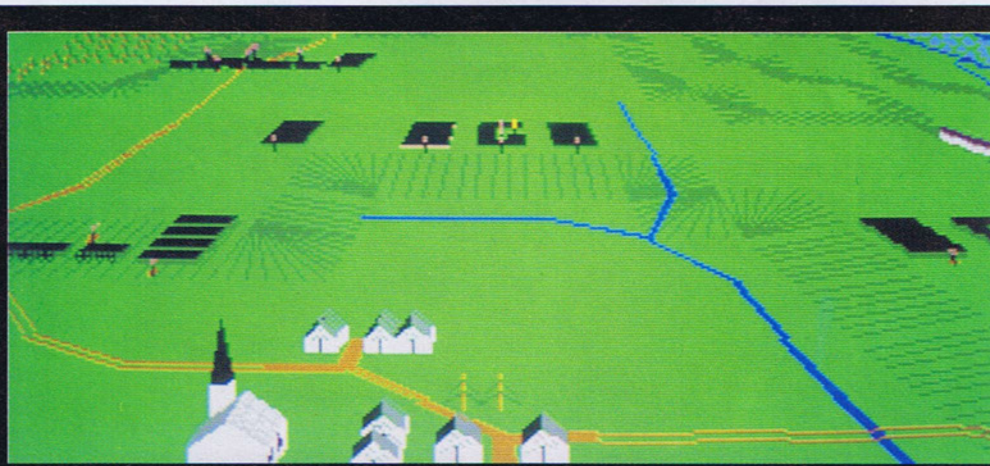
Looking south from Alexander's position. The yellow text message just tells you what the computer's doing.



Looking east from Lannes' position on Santon Hill (the option to look through other commanders' eyes is on).

JUDGEMENT

This wargame provides a real challenge. Novices may be better off looking elsewhere, but anyone who wants to play a serious game and is prepared to put in the effort needed to play the game well will find it very rewarding. If you liked *Waterloo*, you'll find this a worthy follow-up.

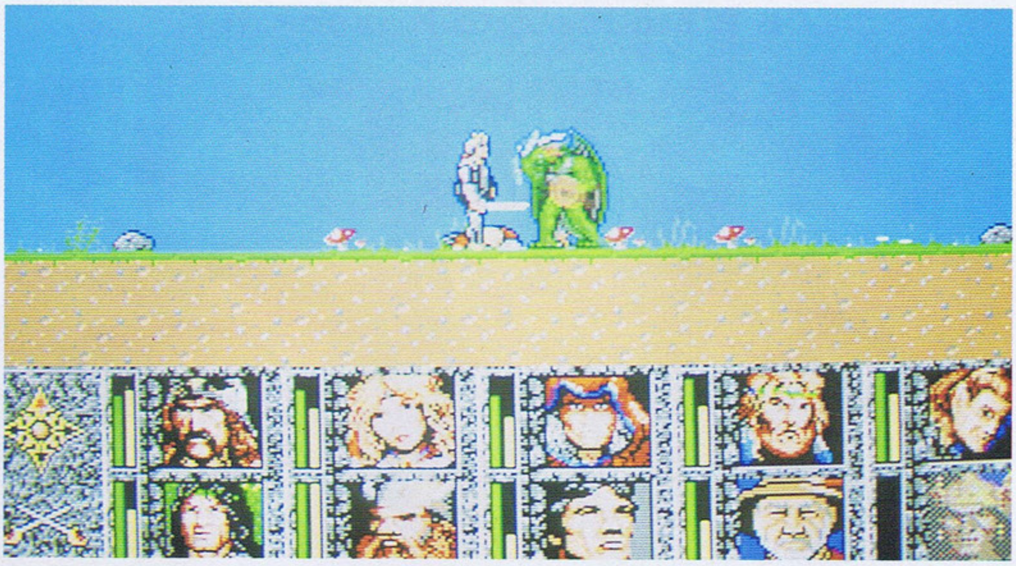


Looking east from the town of Pratz at the allied forces who are currently dominating the high ground.

Reviewer Andy Smith

GRAPHICS AND SOUND

The character portraits are all good and while the overhead and side views are basic, they're quite reasonable– at least the sprites respond quickly to key presses. Sound is limited to a few spot effects and these are nothing to write home about.



Right: In combat, with the Draconian forces proving to be tough cookies.

DRAGONS OF FLAME

SSI/US GOLD £24.99 ■ Joystick or Keyboard

SSI continue their series of AD&D releases with *Dragons of Flame,* an action game (like *Heroes of the Lance,* the first release) set in a mythical world.

It's 300 years since the gods abandoned the people of Krynn and as a result, Takhisis, the Queen of Darkness has awakened some dragons and created an army of Draconians. Once her armies are victorious, she'll be able to rule the land. All that can stop her is a bunch of companions – led by your very own self.

The battle against Takhisis has already begun, the Disks of Mishakal have been taken and one of your party (Goldmoon) has become a true Cleric. Unfortunately, your party have also managed to get themselves caught up in a Draconian army and have to reach the caves of Sla-Mori, sneak into the fortress of Pax Tharkas in order to free the slaves and recover the sword 'Wyrmslayer' so as to bind the forces of the resistance together.

Up to 10 companions comprise your band (you start with eight, the other two can be recruited as you travel) and the idea is to move through the countryside, find the caves, enter the fortress and do the business. There are two main movement modes: the first shows your party represented by a single, viewed from above, character that is controlled directly by joystick. The second is viewed from the side and shows only the party leader (you can switch party leaders whenever you feel like it) and any characters encountered – friendly or not. Encountering baddies usually means you have to fight them and this involves either pressing the firebutton and moving the joystick to one of eight positions, or calling up a spell menu and casting a spell (if the current character has the ability). Encountering goodies, though, usually results in a text message either giving you some helpful advice, such as "There is an arms cache to the north" or informing you that someone would like to join your party. There are several helpful items lying around that can be picked up and used by members of your party, and these are indicated by blue squares on the overhead view. Once a character dies, his/her portrait at the base of the screen becomes blurred and once you've lost all the party, well, it's time to either start again or load back in that saved game. ■



The spell casting screen: handy, and essential for defeating some of the monsters encountered.

LASTING INTEREST

It's simple stuff so it's easy to get into. It's also easy to play and with a bit of application shouldn't take too long to complete. That said, it's not *too* easy and the difficulty tuning has been set about right. It's definitely an action game and the role-playing elements that creep in give it a nice bit of variation on a straight hack'n'slash game.

GRAPHICS	6
SOUND	4
INTELLECT	3
ADDICTION	6
OVERALL	62%

JUDGEMENT

***Dragons of Flame* is definitely enjoyable to start with, but the sheer number of enemies that have to be dealt with takes the edge off the excitement and the whole thing starts to get a shade on the repetitive side. Still, it's certainly a nice easy game to get into and works well as an introduction to the sort of things that happen in 'real' role-playing games.**

Reviewer Andy Smith

The start of the game and a non-player character is encountered.



What you now have to decide is whether it is worth the risk.



"I say Holmes, just how does one become a detective and get mixed up with 'orrible murders, dastardly deeds and villainous felons?" "Elementary, my dear Watson: you simply enter this competition, in which the winner gets to spend a weekend doing just that in the comfort of a Trusthouse Forte hotel."

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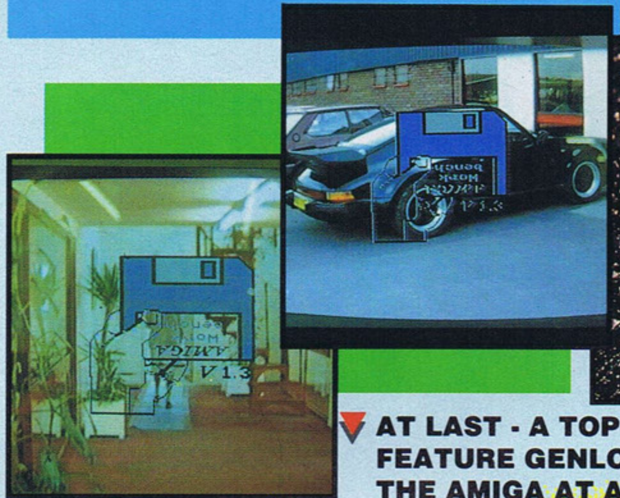
1. What nationality is Hercule Poirot?
   a) French b) Belgian c) Dutch
2. What instrument does Sherlock Holmes play?
   a) Piano b) Cello c) Violin
3. Which Agatha Christie mystery is the longest-running stage play ever?
   a) The Mousetrap b) A Caribbean Cruise c) Death on the Nile

Employees of Future Publishing and Electronic Arts are not allowed to enter. The judges' decision is final. No correspondence will be entered into. No entries on purple, scented postcards with the name Derek on them will be accepted.

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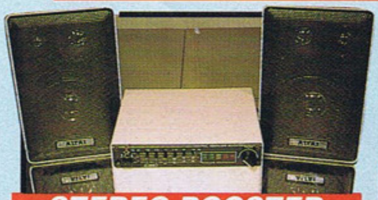
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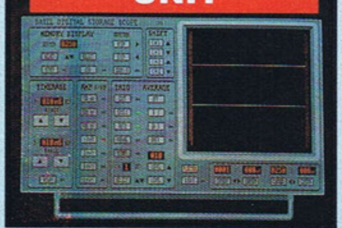


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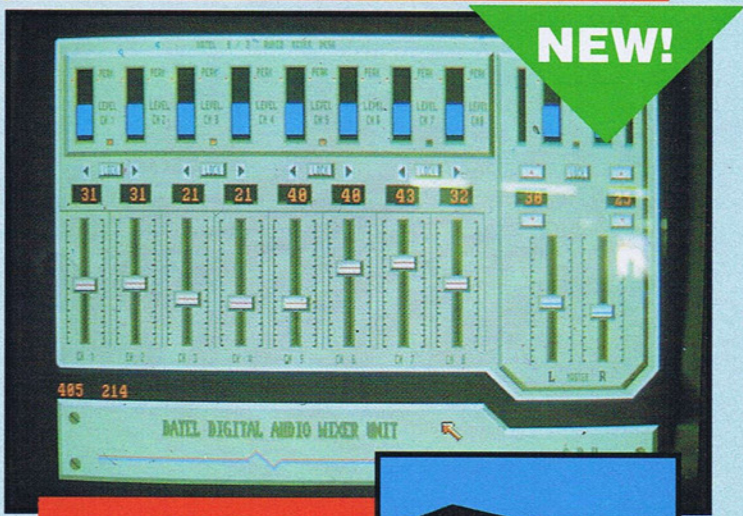
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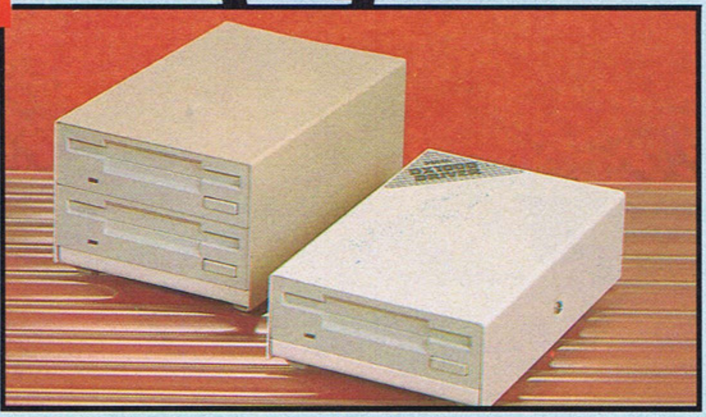
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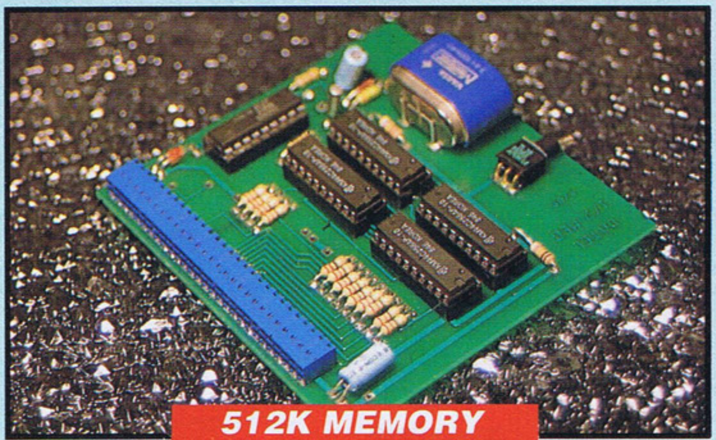
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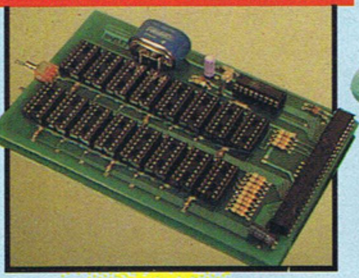


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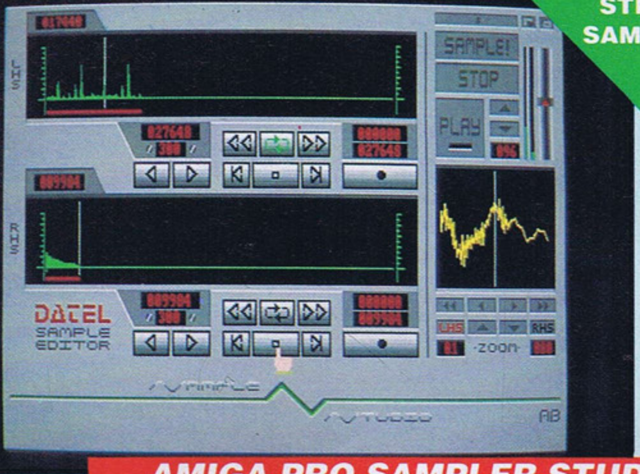
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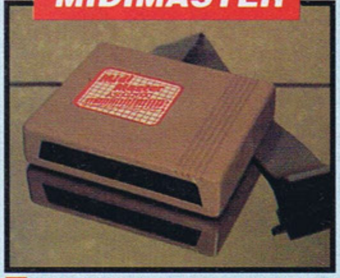
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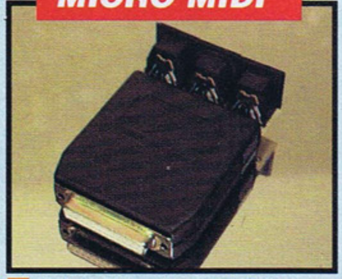
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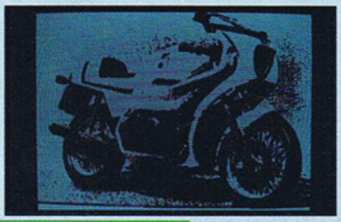


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DAVE JONES, programmer of Psygnosis' hits *Menace* and *Blood Money*, presents part two of his series in which he divulges the tricks of the trade used by top games programmers.

THE WHOLE TRUTH ABOUT GAMES PROGRAMMING: 2

This month:

SCROLLING

This month's example with source is the dual playfield *Menace* scroll. The framework source form last month has been used to allow the scroll to be executed, with return to the CLI upon pressing the left mouse button. Try executing the assembled file on the disk, what you see should hopefully be recognisable as *Menace*, minus any aliens or your ship on the screen.

When designing your scroll routine there is one major decision to make: namely, should it be a hardware or software scroll? First I'll explain the differences.

Hardware Scroll

The Amiga has the ability to hardware scroll the display screen. This means the entire display can be shifted pixelly, left or right, with virtually no overhead or processor usage. It actually does better than this in that it can change the scroll value every line if required: take a look at *Shadow Of The Beast* for some impressive use of the hardware scroll.

Software Scroll

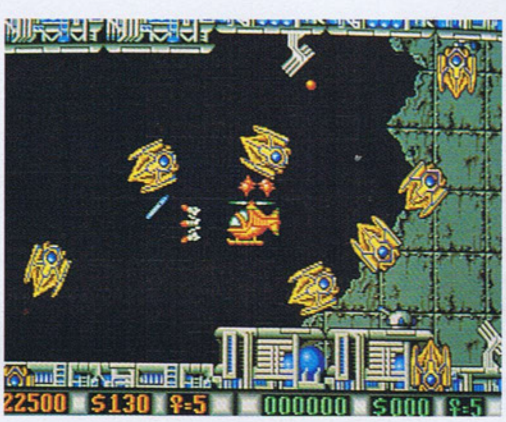
A software scroll entails using the processor, or preferably the blitter, to physically shift the display memory the required number of pixels. Take for example a typical 32-colour screen that requires 40000 bytes: to scroll the entire display memory, even using the blitter, would take the best part of a frame (1/50th of a second).

Pros and Cons

It seems fairly obvious at first glance that the hardware scroll is the one to go for: however, thoughts must now turn to what exactly will be drawn into the display memory. To move an alien about the screen for either method requires a simple procedure as follows...

1. Save the memory where the alien is to be drawn.
2. Draw the alien (masked) into this memory.
3. When moving the alien, restore the memory and go back to (1).

If we did not do the saving and restoring of the display memory, then as we moved that alien, a 'trail' of itself would be left when it moved. The above procedure is exactly what happens in *Menace*, where the saving and restoring does take up a major part of the execution time of the game. This is where using the software scroll can have an advantage. With the software scroll the usual method is to use the blitter to copy the display memory, shifting it as it goes, to another part of memory, which will obliterate the contents of what was previously there. This means that only step 2 of above need be executed when moving aliens about, as the whole of the display memory is restored while it is being scrolled.



In one of David's other games, *Blood Money*, he used a software scroll to enable him to put more objects on the screen – as you can see from this screenshot of some furious action.

If you envisage having a LOT of objects flying about on a scrolling screen, then there comes a point where the software scroll will save you more execution time than the hardware one. The software one is also simpler to write, not having to bother with steps 1 and 3 above. Incidentally in *Blood Money* I switched to a software scroll for the very reason of the number and size of the aliens kicking about compared to those flying around in *Menace*
There are, of course, many variations on scrolling techniques which are dreamed up by programmers: it is simply a case of sitting down with pen and paper and working out which one is best suited to your own game.

Scenery Blocks

With the scrolling method decided upon I had to come up with a technique for scrolling through approximately 30 screens for one *Menace* level. The simplest way would be to have 30 screens laid end to end in memory and simply hardware scroll through memory. However, at approximately 24 Kbytes per screen this would require some 720 Kbytes, not exactly easy with only 512 Kbytes! Game playing areas therefore tend to be made up from maps.

The scenery graphics were broken up into 16x16 blocks, each of these given a number from 0-255 (to store as a byte). To make best use of the blocks many blocks were designed to fit together in certain ways giving as much variety as possible. Some games that use this technique are easily spotted when graphic ►

blocks that do not quite match up are placed together – *Battle Squadron* exhibits this quirk. As *Menace* is a dual playfield game the maximum number of colours per block is 8, made up from 3 planes. Each block required 96 bytes of memory (2 bytes wide x 16 high x 3 planes) with a complete level taking 24576 bytes (256 blocks x 96 each).

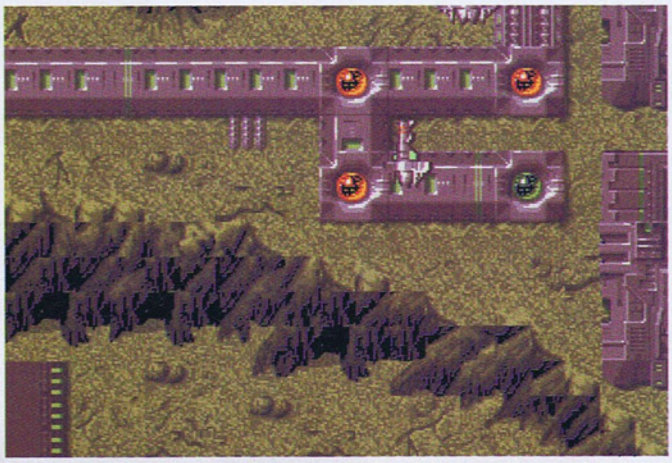
The scrolling technique devised allowed us to scroll through an infinite number of screens, but required memory for only twice that of a normal screen. The *Menace* screen was larger than the normal 320 wide to make the playing area that bit larger. 16 pixels were added either side, expanding it to 352 pixels in length and providing a nice overscan effect. Another extra 16 pixels were also required at the left side due to the way the Amiga accomplishes the hardware scroll (these are the extra pixels that are normally hidden but are hardware scrolled on) – this is fully explained in the Amiga hardware manual. The actual size is therefore 368 pixels wide of which 352 are displayed. As mentioned, the scroll routine requires memory for two screens laid side by side (see figure 1), we can calculate the memory required as...

46 bytes wide
x 2 screens
x 192 high
x 3 planes
= 52992 bytes

The 192 line height of the playing area was chosen as it is the closest multiple of 16 to 200, the game panel adds another 32 pixels to the overall height bringing the full screen size to 224 pixels. The background playfield is constructed in a similar way (see figure 2) but requires an extra 32 pixels at the end of each screen for clipping purposes (more about this at a later stage). The memory required for the background is...

50 bytes wide
x 2 screens
x 192 high
x 3 planes
= 57600 bytes

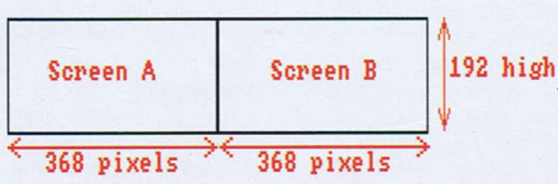
Given that that one screen is 368 x 192 pixels, this corresponds to 23 x 12 blocks (each block being 16x16). As each block is stored as a byte in the map, then map data for one screen would be 23 x 12 = 276 bytes. For approximately 30 screens per level the map data would therefore be some 8280 bytes. Looking at the size of the file MAP on the disk, which is the map data for level 1 of *Menace*, shows a file size of 5282 bytes – so level 1 consists of roughly 19 screens. The map data in this file is simply organised as 'strips of bytes'. This means that every 12 bytes (the number of blocks high the screen is) represent the 12 graphic blocks that sit one on top of another to form a 16 x 192 high strip which is scrolled on from the right.



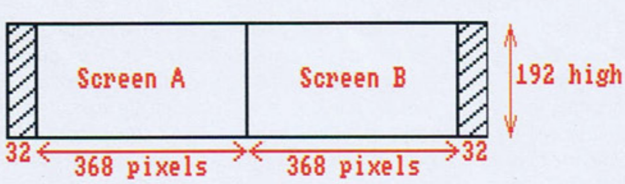
***Battle Squadron* from Electronic Zoo exhibits a programming quirk where graphic blocks that do not quite match up have been used. Can't see it? Then look closely at the ridge running across from the left of the screen.**

That actual graphic data for each block is stored in the file FOREGROUNDS. As discussed, each block is 96 bytes in length, given that the foregrounds file on the disk is 24480 bytes in length, we know this will contain 255 graphic blocks (1 less than the 256 maximum allowed). The first 96 bytes are always 0, as block 0 is a special case being a blank block (there has to be some blank areas on the screen to fly through!).

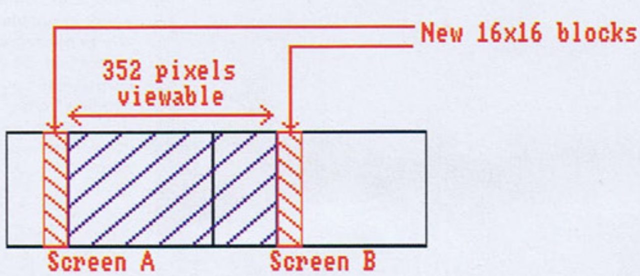
You could try experimenting with your own graphic data and map. If you altered the bytes in the map in any way, then you will see 16 x 16 blocks scrolling on that were obviously not designed to fit together. You can even try changing the map file to some other file, as it is simply a sequence of bytes that can be any value. The program will not crash doing this. You can even do this with the foregrounds file to produce some pretty random graphics!.



Scenery (foreground) screen
Figure 1



Background screen
Figure2



Scenery (foreground) screen
Figure 3

How the scroll works...

Now we know how the map and graphics are organised I will attempt to explain how the scroll works. If it sounds confusing, which it probably will at first, persevere, as when it clicks it should seem pretty straightforward.

Take a look at figure 3. This shows our two screens laid side by side in memory. At any one time we are displaying 352 pixels (22 words) of this data. The bit plane pointers on the Amiga can be positioned on any word (16 pixel) boundary. Incrementing the pointers therefore would scroll through memory 16 pixels at a time, which is a mega speed compared to the single pixel *Menace* requires. We therefore use the hardware scroll to shift the display pixelly from 0 to 15, then when we want to scroll to the 16th position we increment the bit plane pointers but reset the hardware scroll back to 0. We will carry on doing this until we have scrolled entirely through screen A and are displaying screen B. At this point we reposition the bit plane pointers back to display screen A and repeat the procedure again. OK, this will smooth scroll us from A to B.

Now, to keep new data coming onto the screen we draw graphic blocks as defined in the map, one strip at a time (16 x 192 pixels) just to the right of where we are displaying (as shown in figure 3). Therefore for every 16 pixels we scroll on we draw a new strip from the map, scroll another 16 pixels, draw a new strip etc, etc. Remember that the strip is being drawn just to the right of where the display is, so we cannot see it being drawn, but only see it scrolling smoothly on.

Right, if you understand so far you may notice a quirk in that when we have fully reached screen B, we reposition the plane pointers back to screen A and start again. This sudden jump to screen A though will cause a complete new screen to appear showing what was previously in screen A. This is where we apply the twist in the tail. As we are drawing the strips into screen B and scrolling them on, at exactly the same time we draw the same strip into screen A, just to the left of where we are displaying (see figure 3 again). This means that as we are forming and scrolling through screen B, the exact same data is being formed in Screen A, so when we are completely displaying screen B, screen A is also

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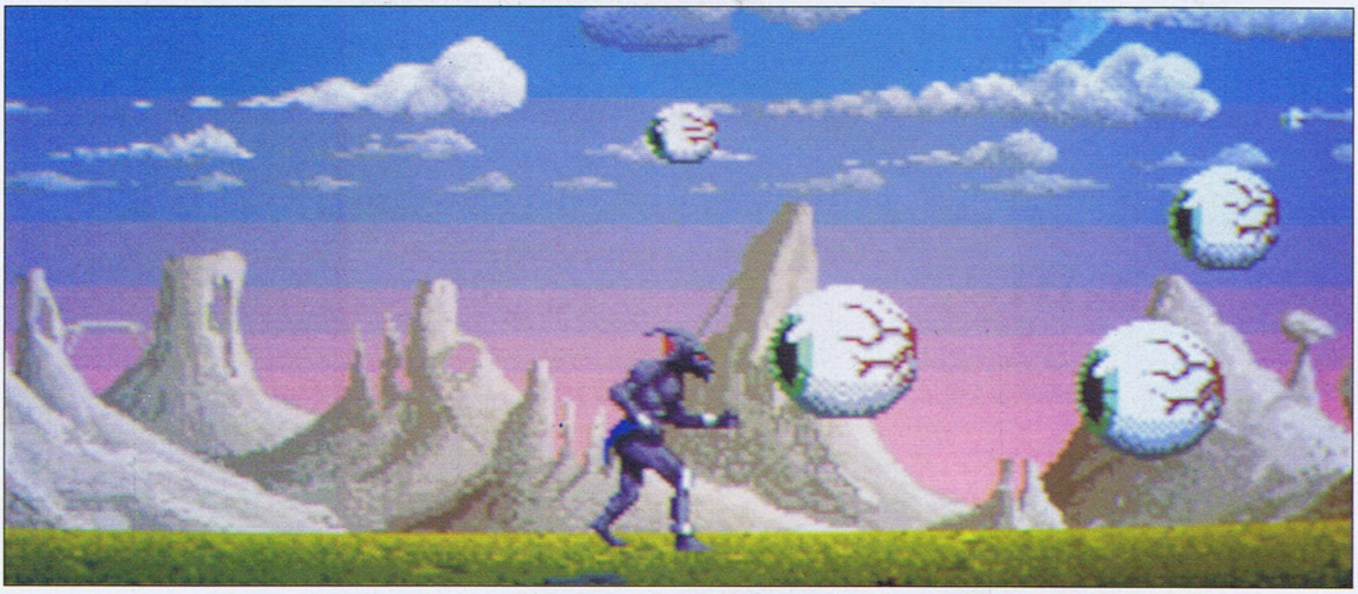
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***Shadow of the Beast*, another game from Psygnosis, demonstrates impressive use of hardware scrolling – which is the technique used in Menace.**

exactly the same. NOW when we display screen A again, nothing will seem to happen as the same data is being displayed, but we have moved the plane pointers back to screen A, allowing us to repeat this process, and to scroll through large numbers of screens with only two screens in memory!

If your brain has now turned to jelly with that lot, do not worry, the light will dawn soon. Read it a couple of times, remembering the problem you are trying to overcome.

The background playfield in *Menace* is scrolled through in the same way, although no map building is done as the background is a simple wrap scroll where whatever gets scrolled off on the left reappears again on the right. At the start of a level, the background screens A and B are both built identically from a small map that allows only 16 blocks maximum. The Background is scrolled once every SECOND frame to allow it to scroll half the speed of the foreground. This gives the nice parallax effect. The graphic data for these blocks are included as source in the scroll source on the disk. The background graphic blocks are only 4 colours.

The copperlist

Finally for this month a run down of the copperlist for the main game (Listing 1). I tend to put everything that describes the display into the copperlist, although many can simply be written with the 68000. It allows the full display to be quickly changed or referred to rather than looking through your source to find where you changed modulo's etc, for certain copperlists.

The first instruction is a 'wait for line 10', which simply allows a bit of time after a vertical blank occurs in which to change some values in the list, before the copperlist is executed again.

Next we set the bitplane pointers. Six planes in all for dual playfield, three for the back playfield (as defined first) then come the three for the front playfield. Note these all point to 0 as they will be initialised once we have allocated some screen memory.

Next come the control registers. BPLCON0 is set to six planes with dual playfield activated.

BPLCON1 sets both playfield scroll values to 15. As we want to scroll left we have to actually decrement the hardware scroll value, incrementing it will scroll us right.

BPLMOD's are set to the difference in width of the screens laid side by side in memory, to the displayed areas.

DDFSTRT and DDFSTOP are increased from the normal values by one word each, DDFSTRT is increased by a further word due to the hardware scroll. The hardware manual goes into this in greater depth.

DIWSTRT and DIWSTOP are set to reflect a screen size of 352 x 224 pixels. Note that the display is set higher up the screen than normal to allow 224 pixels to be viewed on an American system on which *Menace* appears as full screen with overscan.

COLOR and SPRITE registers are all set to 0 initially, these are set up by the initialisation routine of the game.

After 192 lines have been displayed a copper change occurs which switches the display to a 16 colour one in which the panel is displayed. The panel is 352 x 32 pixels, the graphic data is stored in the file PANEL on the disk. ■

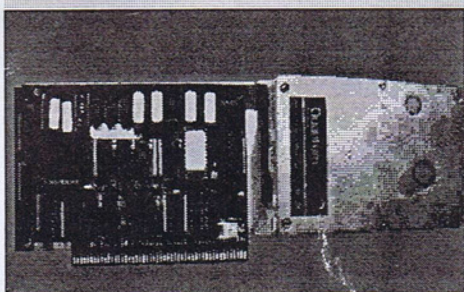
LISTING 1 - MENACE COPPERLIST

```
clist        DC.W   $0A01,$FF00
copperlist   DC.W   bplpt+0,$0000,bplpt+2,$0000
             DC.W   bplpt+8,$0000,bplpt+10,$0000
             DC.W   bplpt+16,$0000,bplpt+18,$0000
             DC.W   bplpt+4,$0000,bplpt+6,$0000
             DC.W   bplpt+12,$0000,bplpt+14,$0000
             DC.W   bplpt+20,$0000,bplpt+22,$0000
             DC.W   bplcon0,$6600
scroll.valueDC.W   bplcon1,$00FF,bpl1mod,$0036
             DC.W   bpl2mod,$002E,bplcon2,$0044
             DC.W   ddfstrt,$0028,ddfstop,$00D8
             DC.W   diwstrt,$1F78,diwstop,$FFC6
colours      DC.W   color+0,$0000,color+2,$0000
             DC.W   color+4,$0000,color+6,$0000
             DC.W   color+8,$0000,color+10,$0000
             DC.W   color+12,$0000,color+14,$0000
             DC.W   color+16,$0000,color+18,$0000
             DC.W   color+20,$0000,color+22,$0000
             DC.W   color+24,$0000,color+26,$0000
             DC.W   color+28,$0000,color+30,$0000
             DC.W   color+32,$0000,color+34,$0000
             DC.W   color+36,$0000,color+38,$0000
             DC.W   color+40,$0000,color+42,$0000
             DC.W   color+44,$0000,color+46,$0000
             DC.W   color+48,$0000,color+50,$0000
             DC.W   color+52,$0000,color+54,$0000
             DC.W   color+56,$0000,color+58,$0000
             DC.W   color+60,$0000,color+62,$0000

sprite       DC.W   sprpt+0,$0000,sprpt+2,$0000
             DC.W   sprpt+4,$0000,sprpt+6,$0000
             DC.W   sprpt+8,$0000,sprpt+10,$0000
             DC.W   sprpt+12,$0000,sprpt+14,$0000
             DC.W   sprpt+16,$0000,sprpt+18,$0000
             DC.W   sprpt+20,$0000,sprpt+22,$0000
             DC.W   sprpt+24,$0000,sprpt+26,$0000
             DC.W   sprpt+28,$0000,sprpt+30,$0000

             DC.W   $DF01,$FF00
             DC.W   bplcon1,$0000,bplcon0,$4200,ddfstrt,$0030
rastersplit2DC.W   bplpt+0,$0000,bplpt+2,$0000
             DC.W   bplpt+4,$0000,bplpt+6,$0000
             DC.W   bplpt+8,$0000,bplpt+10,$0000
             DC.W   bplpt+12,$0000,bplpt+14,$0000
colours2     DC.W   color+20,$0000,color+30,$0000
             DC.W   color+2,$0000,color+4,$0000
             DC.W   color+6,$0000,color+8,$0000
             DC.W   color+10,$0000,color+12,$0000
             DC.W   color+14,$0000,color+16,$0000
             DC.W   color+18,$0000,color+22,$0000
             DC.W   color+24,$0000,color+26,$0000
             DC.W   color+28,$0000,color+0,$0000
             DC.W   bpl1mod,$0000,bpl2mod,$0000
             DC.W   $DF01,$FF00,intreq,$8010
             DC.W   $FFFF,$FFFE
```

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CROSSING THE GREAT DIVIDE

Need to transfer files from different disk formats? JASON HOLBORN checks out CrossDOS, a program that promises to make the process considerably easier.

"A disk's a disk, innit? They all look the same, so I should be able to put my PC text files disk into my Amiga (the disk certainly fits!) and read the files directly into my Amiga word processor." As we all know, this is sadly not the case. Even though you may use a disk of exactly the same type and make, your Amiga will still refuse point-blank to read disks once it has been used on another make of computer.

The problem lies in the way that computers use floppy disks. Before a disk can be used to store files, the magnetic particles that make up the disk must be arranged into the order required by the machine that the disk is to be used on. If the 'format' of the disk is different from that used by the machine trying to access it, the disk will appear to be unreadable.

To make life a little easier, *CrossDOS* is an immensely useful utility program that allows any Amiga drive to read and write disks in both AmigaDOS and MS-DOS formats (including PC-DOS and even Atari ST formats). By simply referring to a drive using the relevant device name, any Amiga application that accesses the disk drives through the operating system can be made to read and write MS-DOS directly.

What must be stressed is that *CrossDOS* is not an emulator, but just a tool to transfer files between previously incompatible disk formats – you'll need a Bridgeboard or the KCS PC Emulator board (see news pages for more!) to actually run program files on a PC format disk. As for running ST programs – forget it.

Installing CrossDOS

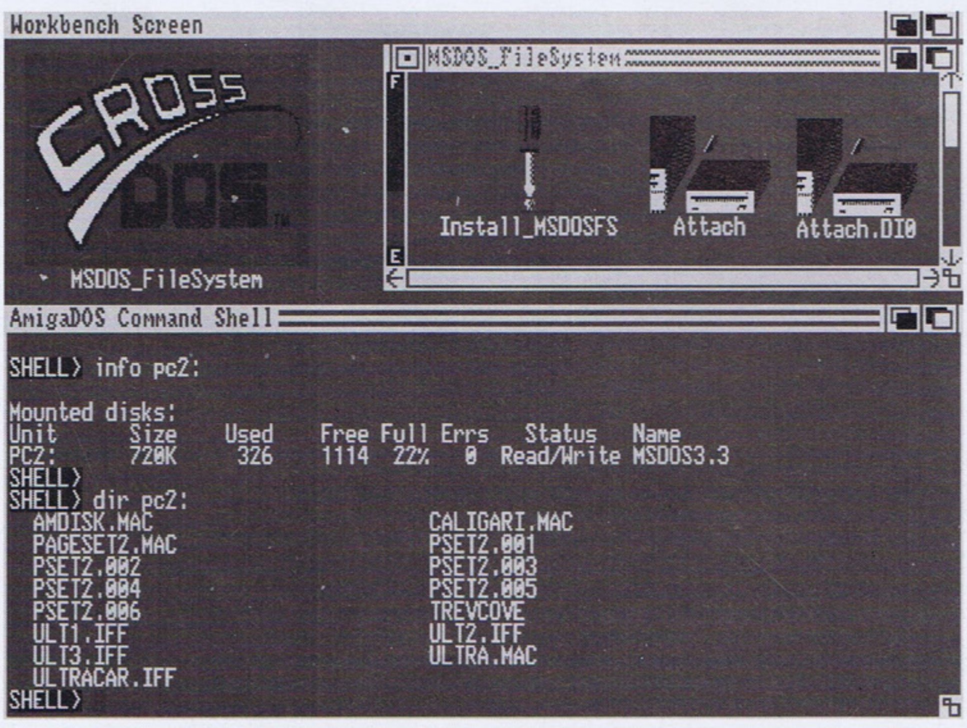
CrossDOS works by installing a device driver into the Amiga operating system to handle the reading and writing of MS-DOS format diskettes. The program can be installed onto almost any boot disk by simply copying across the device driver files and putting them into the appropriate logical devices. Getting *CrossDOS* up and running once all the files are installed, is just a case of editing your StartUp-Sequence to 'Mount' the PC file System.

Using CrossDOS

The possible uses for a utility such as *CrossDOS* are almost unlimited. Probably the most common use that Amiga owners will find for *CrossDOS* is for sharing files between the Amiga and Atari ST. If you own a program such as Progressive's *PIXmate*, any NeoChrome picture (NeoChrome is one of ST's picture file formats) stored on an Atari disk could be read straight into the Amiga, re-saved in IFF and then loaded directly into *Deluxe Paint*... without ever having turn on the Atari!

If you use *Lotus 1-2-3* on PC Compatibles at your place of work, you could bring your work home on a floppy disk and load it directly into an Amiga spreadsheet such as *VIP-Professional* or *Plan/IT* (both support Lotus worksheets). Both *Word Perfect* and *Protext* users could directly load in text files created using the PC versions of those two programs. How about being able to swap IFF pictures between the PC and Amiga versions of *Deluxe Paint?* Or even accessing *Master Tracks* performance files created on the Atari - the list of uses is endless.

Even at Amiga Format, we've started using *CrossDOS* in favour of that old faithful, *DOS-2-DOS*. All text files and screendumps produced on our office Amigas (yes, we write the mag on Amigas!) are written out to PC format disks and loaded straight into our office Macintosh SE/30 (OK, the Mac actually belongs to Damien). Previously, we had no choice but to port files to the Mac in batches (using *DOS-2-DOS*), but now any file can be transferred within seconds just by calling up a new CLI window.



CrossDOS works by installing a device driver into the Amiga operating system to handle the reading and

Conclusion

For Amiga owners who regularly use either an Atari ST or a PC compatible, *CrossDOS* is a dream come true. OK, so *DOS-2-DOS* has been happily reading and writing PC and ST disks for years, but even with *DOS-2-DOS*, life was never so easy. Being able to just bung a PC (or ST) disk into your Amiga and then access the files on that disk directly from any Amiga program makes the task of transfering files an absolute pleasure.

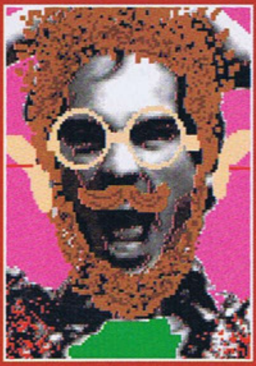
So what kind of people should consider purchasing *CrossDOS?* For starters, users of *DOS-2-DOS* should rush out today and buy *CrossDOS* immediately. For the rest of you, if you think you are ever going to want to exchange files between either an ST or PC, then drop what you're doing, forget those comms cables, and phone Power Computing immediately. Put simply, *CrossDOS* is one of the few true essentials for the Amiga. ■

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ON YOUR DISK

X-OUT
Will you look at this! A fully playable demo of the first level of Rainbow Arts' amazing underwater extravaganza. Shoot-em-up fans have never had it so good.

ULTRAPAINT
So you fancy yourself as a bit of a Picasso? Well, now's the time to prove a point. Here's your chance to pummel pixels with this phenomenal graphics package until the paint drys.



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Moving tiles... boring? Not this implementation! Pretty graphics, interesting tile images and four very different games make this an experience you won't want to miss.

XOPER
Not a new cough medicine, as many would believe, but an invaluable tool for investigating and interacting with the Amiga's multi-tasking operating system.

MENACE SCROLL
Dave Jones opens up his locker to reveal more secrets about games programming. Creating smooth horizontal parallax scrolling is this treat he has in store for you this month. Source, data and demo files are all provided.

WORKBENCH HACKS
More mindless mayhem in the form of two great Workbench hacks. One will have you shining like a star while the other will have you jumping for joy.

£800 UP FOR GRABS!
Think you've got what it takes to write for the Amiga Format Coverdisk? Get your programming tools out, prove what you can do and earn yourself some cash in the process. We're after Workbench hacks, demos, utilities, games, game cheats... Turn to page 80 for details.

BACK UP YOUR COVERDISK IMMEDIATELY
DON'T KNOW HOW? SEE PAGE 80 FAST!

DISK EXTRA

Where else can you get a magazine and a disk containing almost 900K of programs for under £3? RICHARD MONTEIRO guides you through the disk's stunning offerings.

X-OUT

PROGRAM: RAINBOW ARTS
FILES: X-OUT*

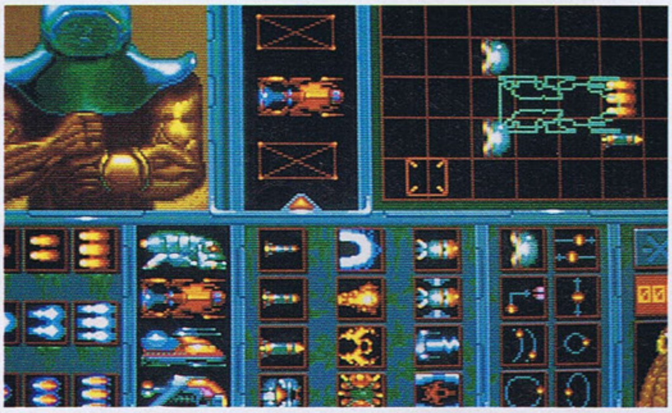
Let's get one thing straight. X-Out is pronounced 'cross out'. Got it? Good. Let's party.

From the farthest reaches of outer space they came to inhabit the depths of the oceans. From their savage assaults on a defenceless human race grew a planet's last desperate crusade: project Deep Star, the ultimate underwater war machine.

Early attempts proved catastrophically ineffective. A few kept faith and continued improving Deep Star, the greatest collection of man's technical wizardry committed to the hands of a lone gladiator for one final attempt at halting the inevitable: the frantic death throes of a civilisation sinking into darkness.

Take no prisoners, give no quarter, make no compromise... the World's hopes lie in your hands.

So much for the introduction: now for the translation. X-Out is a furious shoot-em-up based underwater. The action is tremendous with, on occasions, 50 objects milling around the screen. Sprites and background are made up of 48 colours and animation takes place at 50 frames a second. Sounds good, looks good, is good!



Size is everything in X-Out. And money can make get you the biggest gun you can carry. Buy, buy, buy or it'll be bye, bye, bye.



You've just met up with an end-of-level super alien. And judging by your energy bar this is the last alien you're ever going to meet.

X-Out is a horizontally-scrolling shoot-em-up. The idea is simple: build yourself an underwater craft, arm it, sail the high seas (don't you mean scuttle along the seabed? – Ed) and waste any aliens that get in the way.

Getting going

X-Out can only be run by inserting the Coverdisk into the drive and resetting the computer. A prompt will appear asking you whether or not you wish to run the playable demo. Typing in Y and pressing Return will automatically run Rainbow Arts' excellent blaster.

Before you can rid the seas of alien scum, you must construct a ship from items in the stock room. Everything costs, so you've got to take care what you buy. You can never purchase too much. No matter how much weaponry you've got, you'll always want more. Money talks, but you've only got so much. Be selective: some weapons work well, others aren't worth thinking about.

All control is performed by a ▸

▸ joystick in Port 1. Items must be picked up from the warehouse and dropped into the centre of the screen. When you've created the craft of your choice, click on the icon labelled X-Out. Come out with your guns blazing.

■ Please note: *X-Out* is stored on the Amiga Format disk in a non-standard way. It's not possible to copy X-Out onto another disk using the standard file copying procedure. Instead, the disk must be copied using the Duplicate option in the Workbench menu item. Copy the disk by highlighting the Coverdisk (done by single-clicking on it) and then clicking on the Duplicate menu item.

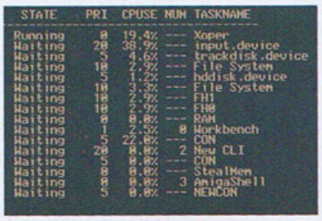
XOPER

PROGRAM: PUBLIC DOMAIN

FILES: XOPER, XOPER.DOC

Find out what your system is up to with this nifty utility. Among many other things, Xoper will inform you of how much processor time each task uses.

Xoper comes with its own command line and can accept commands for checking on the priority, status and processor usage of tasks; task flags including allocated signals, signals received and the address of the next instruction to be executed; libraries and their base address, revision number and flags; devices



Whether you want to see which tasks are running, send signals to a task, or even kill a task, Xoper has something for you.

and their open count, version, revision and devicename; upper and lower bounds of memory; flags, signal bit and queue length of ports.

In addition to that lot you can see what interrupts, the stack and many other system items are getting up to.

But that's only half the story. It's also possible to alter node priorities, break tasks, track memory allocation of tasks, display reset vectors, list memory-resident fonts and their statistics, freeze a task, signal a task and even kill a task. It's one hell of a tool to have around.

Getting started

Inside the XOPER drawer you will ▸

ULTRAPAINT

PROGRAM: PUBLIC DOMAIN

FILES: ULTRAPAINT, ULTRAPAINT.DOC

You won't find a better art package in the public domain. *UltraPaint* is littered with countless features. Far too many to list in full here, but to whet your appetite here are a few:

* Brush – variable size brushes can be used and custom brushes can be created.
* Undo – this will undo your last action that caused anything to be drawn to the screen.
* Freehand – main drawing mode. Others include sketch, line, ray, box, solid box, ellipse, solid ellipse, polygon, solid polygon, fill and airbrush.
* Zoom – lets you investigate areas of the screen close up. The magnification level is selectable by you and a grid can be switched on.

Getting started

Inside the ULTRAPAINT drawer you'll find a program called ULTRAPAINT. You can run the graphics package as is by double-clicking on the program icon. The art software will boot up in low resolution (320 by 200 pixels using five bitplanes or 32 colours).

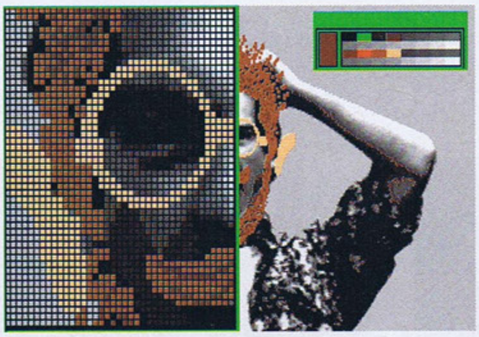
The resolution can't be changed once you're using UltraPaint: it must be done before you start. To specify the resolution simply highlight the ULTRAPAINT icon and select Info from the Workbench menu. In the Tool Types bar inside the information box you'll notice several variables (h=200, w=320, d=5, p=1). These determine UltraPaint's screen resolution. Obviously h stands for the vertical resolution or height, w for the horizontal resolution or width, d for the number of bitplanes or depth and p – admittedly not so obvious – for a preset resolution.

The preset values and resolutions are as follows:

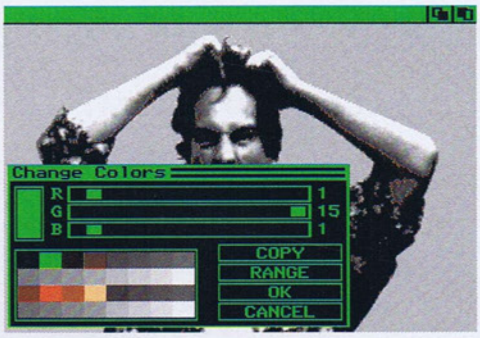
P Value	Resolution
1	320*200*5
2	320*400*5
3	640*200*4
4	640*400*4

If you require some other resolution you'll have to remove p from the Type Tools and alter the values h, w and d manually.

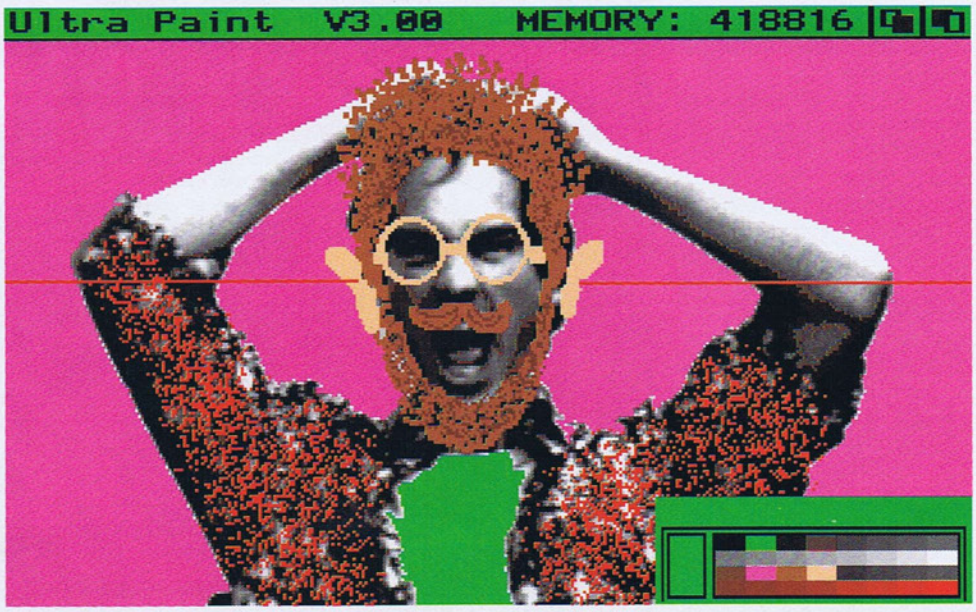
Full instructions on using *UltraPaint* are in the help file. However, PicPuz uses IFF brushes for its images. So, select Load IFF image from the appropriate menu in UltraPaint and – when the file selector appears – click on the PICPUZ drawer. Then click on FRAMES inside the PICPUZµ folder. Once inside FRAMES you'll spot two IFF images: GIRL.FRM and MICKEY. FRM. Double-click on one of these to load. Don't worry about the message that states the image is of the wrong resolution: simply click on continue.



The zoom mode in UltraPaint is configurable. In other words, you decide the magnification.



UltraPaint comes with an abundance of editing options and operates in any resolution except HAM.




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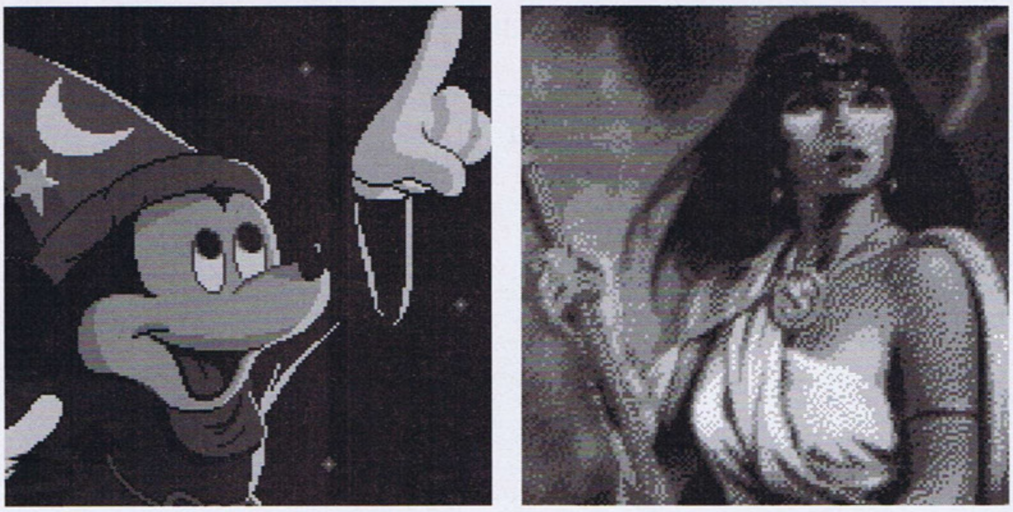
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▸ see the program icon XOPER. Double-click on this icon to run the utility. Because Xoper is so comprehensive, and each command can have so many parameters attached, it is best to read the documentation file. If that seems too much like hard work, type in a question mark and press Return at the Xoper command line.



Two of the images avaliable with the PicPuz puzzle game

PICPUZ

PROGRAM: DAVE COLCLOUGH, STOO FOTHERINGHAM
FILES: PICPUZ, PICPUZ.DOC, BIGCON1, NOFASTMEM, FASTMEM-FIRST, FRAMES (drawer), GIRL.FRM, MICKEY.FRM

PicPuz is a game based on the old moving tiles type of puzzle. The frame is a five by five grid, and there are various different ways to play the game. While moving tiles puzzles can be boring, Dave and Stoo's efforts are graphically and gameplay-wise pleasing.

The game types go like this:

Pair Flip – flips two adjacent tiles in either the vertical or horizontal direction. Place the cursor on one of the tiles you wish to move and hold the left mouse button down while moving in the direction you wish to flip.

Classic – one square is missing, allowing you to move the other squares and unscramble the picture.

Rotate 4 – moves four tiles by 90 degrees. Click on the centre of a group of four to make them spin.

5 Slide – the movement is very similar to Rubic's cube. Five tiles in a row or column move together. To move a column or row, place the cursor on any tile in the row (or column) and hold the left mouse button while moving in the direction you wish to slide.

Getting started

Double-click on the PICPUZ file icon, which is inside the PICPUZ drawer, to start the game. Once loaded, you will notice two icons on the left-hand side labelled Next and Play. Pressing Next will load the next picture in the FRAMES directory (there are only two images). Clicking on Play will shuffle the tiles according to the selected game.

MENACE SCROLL

PROGRAM: DAVE JONES
FILES: MENACE SCROLL, MENACE SCROLL.DOC, MENACE SCROLL.S, FOREGROUNDS, MAP, PANEL

Psygnosis programmer extraordinaire Dave Jones reveals more of his tricks in this month's Amiga Format.. (See page 63)

This month Dave explains how to create ultra-smooth parallax horizontal scrolling. All the source and data files for the first level of Menace, Dave's first game for Psygnosis, are present inside the DAVEJONES drawer.

Source isn't much good if you haven't got an assembler, which is why there's a compiled version of the scrolling level so that you can marvel at Dave's techniques.

Getting started

Inside the DAVEJONES drawer you will see the file MENACE SCROLL. Simply double-click on this file to get the first level of Menace scrolling smoothly by. Click the left mouse button to exit.

You will need to enter the CLI to use the other files, which include the Assembler source and all the graphic data for the first level of Menace. It's there for you to examine and alter.

To compile the source you will need an assembler like HiSoft's Devpac. ■

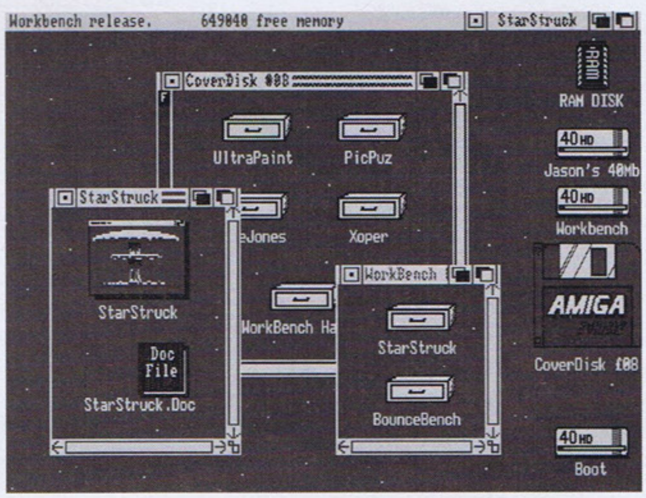
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WORKBENCH HACKS

It's that time again when only the maddest, zaniest, most useless programs are aired.



BOUNCE BENCH

PROGRAM: JEAN-PAUL COSSIGNY
FILES: BOUNCEBENCH, BOUNCEBENCH.DOC

It's hold on to your hat time as you watch in disbelief while the Workbench starts its workout. Is there any way of stopping its stomping? Well, yes, if you've got a joystick plugged into Port 1.

STARSTRUCK

PROGRAM: MARK EVERINGHAM
FILES: STARSTRUCK, STARSTRUCK.DOC

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USING YOUR FORMAT DISK

Before using your *Amiga Format* disk, you should make a back-up of the master disk as soon as possible.

THIS IS VERY IMPORTANT!

BACKING UP YOUR DISK

For a number of reasons, it is rather important to make a backup copy of the Coverdisk as soon as possible. Copying the disk may sound like a complicated task suitable for techno-buffs only, but it is surprisingly simple provided you read the following instructions carefully:

1. First, turn on your machine and load Workbench. Once the Workbench screen appears and the disk-drive light goes out, remove your Workbench disk and insert our Coverdisk.

2. Next, click once on the Coverdisk icon and then press the right mouse-button and the Workbench menus will appear. Now, while keeping the right mouse-button depressed (you can cheer it up afterwards!), move the mouse pointer over to the 'Workbench' heading and a menu will drop down. Move the mouse pointer over the 'duplicate' menu option and then press the left mouse-button.

3. After a few seconds' disk access, the Workbench DiskCopy tool will be loaded and run. Now just follow the on-screen prompts and your *Amiga Format* Coverdisk will be copied to a backup disk. When the machine asks for the destination, insert your blank disk into the drive. Further instructions can be found in the user's guide that comes with your Amiga.

USING THE PROGRAMS

All the programs on the *Amiga Format* disk are specially set up to make them as easy to use as possible. If you can use the Amiga's Workbench then you can use our Coverdisk! If you do have problems with a program, full instructions on loading and using the programs are included in the Disk Pages and these should get you up and running. If you still have problems, you should read the documentation file (.DOC) that is included with every program. To run any of the programs on this month's Coverdisk, all you have to do is follow a very simple procedure. Unless specified differently within the Disk Pages, just double-click on the program's icon on the Workbench and the program will load and run. Full details on how to use the programs once they have run are included with the Disk Pages and also as a documentation (text) file accompanying the program.

To display a documentation file, just double-click on the appropriate .DOC file to be viewed and a window will open containing the file's contents. Pressing the space bar will advance a page at a time.

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IS YOUR DISK FAULTY?

We have done our best to check that the programs on the *Amiga Format* Coverdisk are simple to use, error-free and have no known viruses. However, we cannot normally answer telephone queries on using the software, and we do not accept liability for any consequences of using the programs on the disk.

If your *Amiga Format* disk is faulty – and out of the tens of thousands duplicated, some are unfortunately bound to be – you should send it back for a free replacement within a month of the cover date to:

Amiga Format
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Discopy Labs
Unit A, West March,
London Road, Daventry
Northants NN11 4SA.

If your Amiga refuses to accept the disk, try using the DISKDOCTOR utility on your Commodore Workbench disk to rescue it before sending it off for a replacement. Full details of DiskDoctor can be found in the user's manual that came with your machine.

WARNING!

The game cheats on this month's Coverdisk are straightforward to use, but please read the instructions in the magazine, on the disk and on the public inconvenience walls. Just do it! If you screw up your game disks – or indeed, any other disk – because you failed to read any documentation, it's your fault. You're on your own. And you're getting diddly-squat from *Amiga Format*. You've been warned.

WE WANT YOUR PROGRAM

If you've got any programs for the Amiga which you think other readers would find useful, interesting or amusing, we'd like to know about them.

1. Make sure your program is foolproof to use. 2. Create a file called README.DOC on the disk which explains exactly how to use your program. 3. Fill in this form, sign it, and send it without delay to: CoverDisk Software, Amiga Format, 30 Monmouth Street, BATH BA1 2AP. You could win a share of £800 prize money for the best programs each month.

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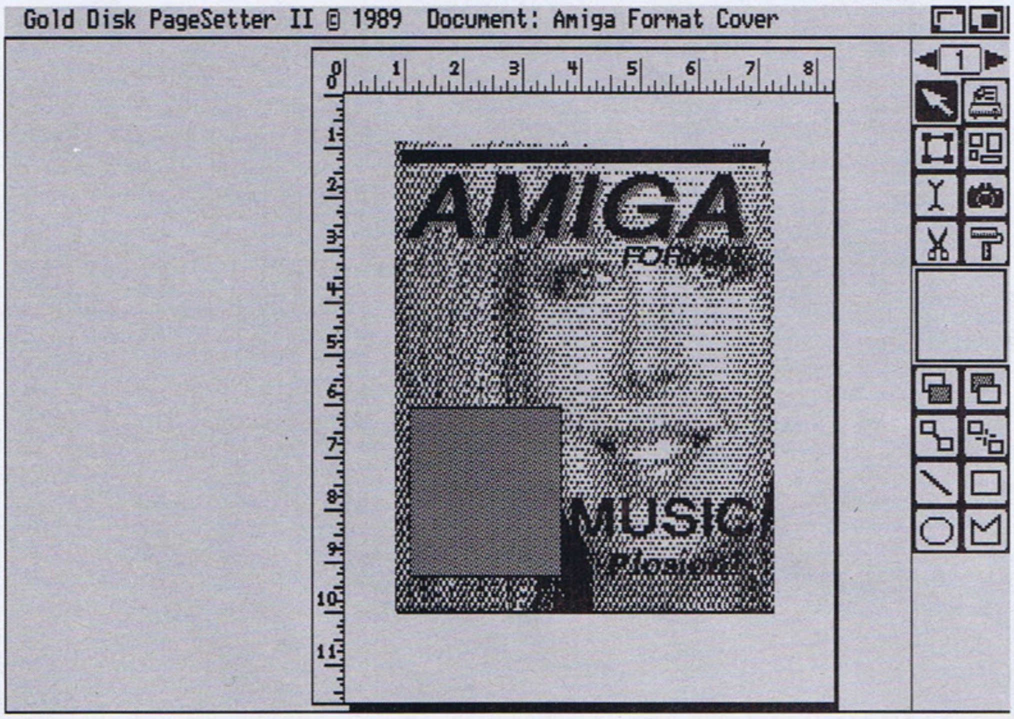
SON OF PAGESETTER

DTP Software need not be expensive, as Gold Disk demonstrated when they released the original *PageSetter* program. Now they've released a major upgrade, in the form of *PageSetter 2*. **JASON HOLBORN** checks it out.

We certainly have a great deal to thank Gold Disk for – not only have they supported the Amiga from day one, but their range of DTP software defines the standards that others must meet. Indeed, the combination of *Professional Page* and *Professional Draw* gives even Mac and PC-based DTP systems a run for their money.

The first DTP package from Gold Disk (which, incidentally, was also the first to be released for the Amiga) was *PageSetter*. While it was adequate for very simple DTP tasks, it really was nothing more than a stop gap until Gold Disk eventually produced their piéce de resistance, *Professional Page*. After the release of *Pro Page*, it seemed that Gold Disk had left the home DTP market in favour of the more profitable professional market. However, after almost four years, Gold Disk have surprised us all by releasing *PageSetter* version 2.

Instead of taking the easy option of just making modifications to the existing *PageSetter* code, Gold Disk have rewritten the system from scratch. It is obvious that much of the new code is actually borrowed from Gold Disk's other DTP system, *Pro Page*. Because of this, *PageSetter 2* has a far more professional feel to it than its predecessor. Although *PageSetter 2* looks and feels very similar to *Pro Page* in many key areas, it still manages to work as a program in its own right, rather than just a stripped down version of *Pro Page* (which wouldn't necessarily be a bad thing).

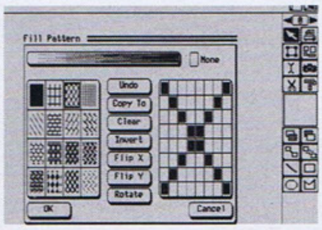


■ **An Amiga Format cover knocked up using PageSetter II – just goes to prove that you don't need expensive Macintosh II computers and Linotron imagesetters to produce your own magazine.**

PageSetter Mechanics

PageSetter 2 allows you to create single page documents in a range of sizes from A4 to B5, with the maximum page size being limited to 8.5 by 14 inches. It's a shame that it doesn't support multiple pages within a single document, which can be rather limiting if you're intending using it to produce multi-page reports, fanzines etc. As it is, each page within your multi-page document will have to be worked on separately from the rest. This is a problem that both *PageSetter 2* and *Pro Page* suffer from, which Gold Disk should seriously consider correcting.

Like both its predecessor and *Pro Page*, *PageSetter 2* uses the now familiar *PageMaker* style principle of 'frames'. Once a page has been created, text and graphics are pasted down by creating frames (boxes) to contain them. These frames can then be easily modified by clicking the mouse button while the on-screen pointer is over the required frame, therefore making the frame 'active'. Because frames can be layered, you often have to send overlaying frames behind the required frame before it can be selected. Selected frames can be cut, copied, moved and then re-pasted down and even temporarily taken off the page and stored on the 'Art Board'.



The PageSetter II pattern editor.

Frames can be linked together in chains so that text can be flowed between several frames, allowing you to create multiple columns of text. When an alteration is made to text within a chain of frames, the program will automatically re-adjust the contents of later frames within the chain.

Fonts For The Memory

Unlike the previous release, text can now be typed straight onto the page – gone is the *PageSetter* text editor of old. This has the advantage of allowing you to write copy to length and see the results immediately, as they will appear on the final printed page. Just like a conventional word processor, the text editor includes full search and replace functions as well as the usual cut, paste and copy facilities.

Probably the most major addition to *PageSetter 2* is the inclusion of AGFA/Compugraphic fonts. Unlike the standard Amiga fonts such as those found on your Workbench disk, Compugraphic fonts are 'constructed' as and when they are needed for display on either the screen or dot matrix printer. Two Compugraphic fonts are included with the package and Gold Disk plan to release more separately.

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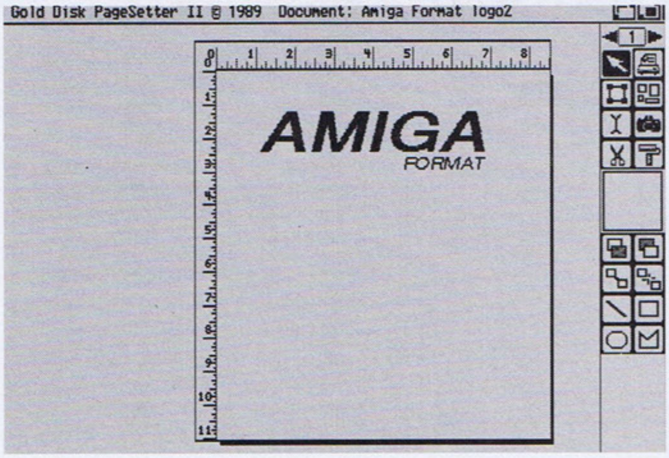
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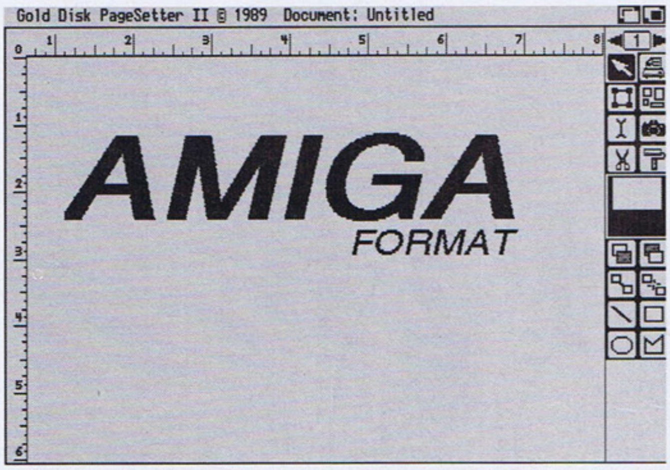
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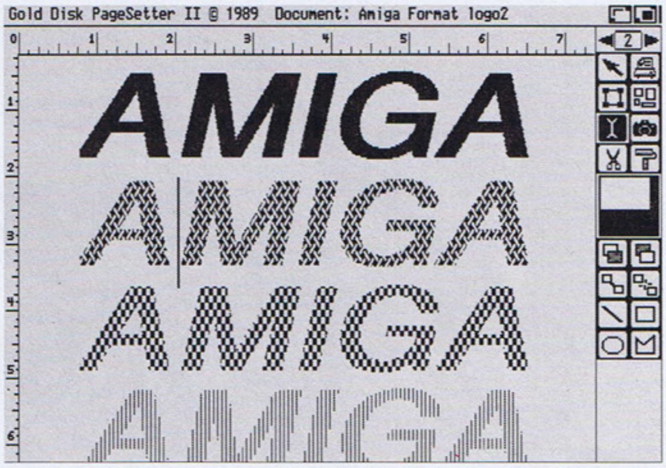
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(Above, and top right) PageSetter II's impressive AGFA/Compugraphic Fonts in action. Notice how they remain 'jaggie'-free even at the highest magnification (200%!).



Some of the fonts that are bundled with PageSetter 2. Only two are Compugraphic fonts, but Gold Disk plan to release more separately.

Compugraphic fonts over standard Amiga fonts is that the resolution that they are printed at is limited only by the maximum resolution of your printer. The result is that the output from *PageSetter 2* offers the kind of quality equalled only by a PostScript laserprinter. Although *PageSetter 2* will also allow you to use standard Amiga fonts, although they will not be printed at anywhere near the resolution of Compugraphic fonts.

The text control facilities are a little sparse. Although the standard point size, style and font type can be controlled, it would have been nice to have been able to change both the 'tracking' (amount of space between the start of each consecutive character) and 'horizontal scale' (horizontal width of characters) of any text on the page. You often find yourself having to re-jig your layouts to work around these short-comings. By the very nature of Compugraphic fonts, it shouldn't have been too hard to implement either of these facilities. However, you do have control over the leading (prononounced as for the metal), which is the space between lines of text, and the fill pattern (which is a unique feature).

Picture This

Presenting your intended audience with pages filled with nothing but continuous text is a sure way to bore them to tears, so you'll no doubt want to include some form of illustrations within your documents.

PageSetter 2 allows you to load any standard IFF picture file into a frame, regardless of resolution, number of colours etc. However, the program lacks any form of colour support (you can forget colour separation etc!), therefore any illustrations you do import will only be printed and displayed in grey scales (using dithering techniques). Surprisingly, even HAM pictures can be loaded in and used (although they will obviously suffer from being knocked down from 4096 colours to 16!).

The program itself includes a number of structured drawing tools that allow jaggie-free objects to be created and manipulated within your page. Like the Compugraphic fonts, these structured objects will be printed at the maximum resolution of your printer. If you lack the kind of creative talent needed to construct good looking structured art, any clip-art files produced using Gold Disk's *Professional Draw* can be loaded and used.

Users of the original *PageSetter* may remember the old graphics editor. The bad news is that this has been removed, which is a shame as it was useful for touching up imported IFF pictures. However, if you've got enough memory, you can still run *Deluxe Paint* in the background.

Putting It On Paper

Documents can be printed directly to any preference-supported printer. Due to the inclusion of structured drawing tools and the Compugraphic fonts, the quality of the output is astounding – easily the best dot matrix output I've seen from an Amiga DTP package.

Just like the original program, version 2 lacks PostScript compatibility, which is hardly surprising considering the market that the product is aimed at (with PostScript laser printers costing around £5000, how many home users can afford to own one?) Gold Disk could rectify this by upgrading their *LaserScript* program to work with *PageSetter 2* – at least this would give users the option of using Postscript compatible printers.

Conclusion

Although Gold Disk recommend at least a megabyte to even start using *PageSetter 2*, more memory is really needed to comfortably use the program (2 Megabytes would be best). Both bitmapped graphics and the AGFA/Compugraphic fonts do use up of RAM, therefore the extra memory is a necessity if you're hoping to produce complex layouts. Surprisingly, you can actually produce more complex layouts. As it is, 1 Meg users really are restricted to only simple layouts.

When memory does start to get tight, the program has a rather disturbing habit of falling over and losing all your work, which can be a barrel of laughs when you've just spent the last couple of hours working on a particularly complex page.

Apart from the obvious omissions and bugs discussed earlier, I was impressed by the power of *PageSetter 2*. If you need to produce professional quality page layouts, then you're probably still better off saving up a few extra coppers and going for *Pro Page*. Otherwise, *PageSetter 2* currently represents the best buy for home users. Highly recommended! ■

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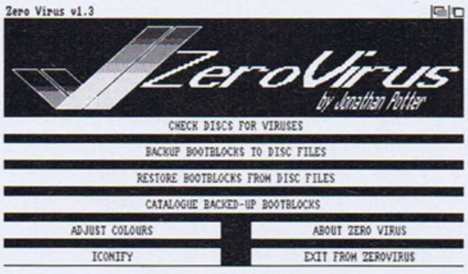
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● **FFISH 213** - Bitplanes the 8 colour icon user and 300 8 colour program icons!
● **FFISH 188** - Boot Intro V1.0 displays a scrolling and a still message of your choice at boot up. DiffDir V1.0 compares 2 directories. FracGen V1.23 fractal generator a real fully featured fractal program.
● **FFISH 168 and FFISH 169** - The Matt Dillion disk special includes loads of utilities and source: Config V1.0, Clock V1.0, DME V1.31, DMouse V1.1, Backup V2.01, SUPLIB, LIBREF, DRES V1.0, DASM V2.11 , FILES V1.2, SHELL V2.1, FINDIT V1.0, LIBS V1.0, SCAT V1.0, ADDCR V1.0, REMCR V1.0 and CMP V1.0. You will need both disks @ £3.00 each.
● **FAUG 41** - Rain Bench, Amiga Arc V0.2 compatible with ARC V5.0.
● **AMICUS 22** - Printer Driver Generator V2.3, Show Print II.3 IFF scree dump.
● **FFISH 158** - DiskX is a sector based disk editor, MemBoardTest V2.4, MSDOS V0.1 lists files written in standard MSDOS or ST format, then copies them to RAM then rewrites to disk in Amiga DOS format, PCBTool V2.6 is an early version of PC Board layout program that does not support printers, ScreenX is a small clock/memory counter, TaskX V2.0 is a 'realtime' task editor,.
● **FFISH 157** - XIcon V2.01 allows you to call up scripts containing CLI commands from an icon. 60 o r80 toggles 60/80 column text, BootBack is a disk boot block save/rewrite and copy program, ECPM is a CP/M emulator.
● **FFISH 145** - Dmouse V1.06 is a versatile program that includes screen/mouse blanker, auto window activator, mouse accelerator, popcli, pop window to front, push to back etc.
● **FFISH 131** - DFC is a disk copier that multi-tasks, Hyperbase V1.6 is a database system, Mackie is a PopCLI replacement, Micro Emacs VMg1b the text editor.
● **FFISH 130** - DirMaster V1.1 is a disk cataloguer, Hp V1.0 a nice RPN calculator which supports calculations with binary, decimal, hex float & complex numbers, Mach V1.6a the mouse accelerator.
● **FFISH 129** - DosKwik a pair of progs which allow you to save files or groups of files to one or more disks for quick loading, MRBackup V2.0 and V2.1 a hard disk back up utility.
● **FFISH 69** - Spool V1.2 : a queue manage, printer driver and SPOOL requester and Wc a file word counter.
Asm68K V1.0.3 fully featured macro Assembler, Blitlab a blitter exploring program in C Conman V0.9 a sort of CLI shell, Dk decays the screen bit by bit, Frags displays memory fragmentation by listing the size of free memory blocks, Icontype changes the icon type, MonProc monitors processes for packet activity, MouseClock turns mouse pointer into a digital clock, Spew generates News of The World type headlines, Sb a sytem browser.
● **FFISH 65** - Sunmouse V1.0 automatically clicks in windows when the mouse is moved over them, RunBack starts programs from CLI allowing CLI window to close.
● **FFISH 55** - ASDG-rrd a RAM disk that survives reset, BigView displays any size IFF picture, EGraph creates graphs from X,Y pair text files. Hyperbase V1.5 a neat database management system, MemClear Zero fills free memory, NewZap V3.0 disk sector editor, Rainbow makes Workbench background a rainbow, 2 Smusplayers to play SMUS IFF music files, View a tiny IFF picture viewer, WB to JX-80 screen dump.
● **FFISH 244** - BBChampion V3.1 the Boot Block Champion load, save and analyze boot blocks. BootIntro V1.2 you specify The headline text of upto 44 characters and the scrolling text of upto 300. FMC V1.2 is a no fast memory program. SizeChecker V1.0 uses a list of file sizes to check unexpected file changes.TextDisplay V1.52 the great text display that handles all screen formats. XColour V1.2 the screen colour setter.
● **FAUG 67** - Disk X V2.0 the sector editor, Hand Shake V1.06b a VT100 terminal emulator, Pack It a whole disk compressor.
● **FAUG 62** - Access! V2.6 very powerful telecommunications package. Hide II allows you to turn off and on your RAM expansion. Cron - runs a table of background tasks, Add Icon V1.0 adds icons to files without icons, IFF Mirrors is an ILBM slide show with X and Y mirroring. FFormat V1.a fast formattor.
● **FAUG 50** - Dir Util V VI the disk manager, Roll Back V1.0 rolls back text that has rolled off the top of the screen, Short Cut allows you to define text to a single key stroke, thus CLI commands are simplar to type.
● **FAUG 47** - FunKey assign any text string to a function key.
● **PAN 25A** - Disk Wipe very quick disk contents wiper, SELECT allows you to select in your Startup-Sequence from a number of scripts, Virus Check V1.1.
● **PAN 19D** - ZOO V1.42a a very good file compressor, Con Man V0.99b provides line editing and command line histories, Distinguish type of files with File Type, Pipe Handler, Pop CLI V3.0.
● **PAN 17B** - AmiGazer 1573 stars to view any time, date or lattitude CLI only, Date Book the diary, bind any text string to a function key, use CLI from a menu, a disk cataloguer Lightning Logger V1.2.
● **APDC 18** - Floppy Disk Utils: Quick Copy V1.0, Disk Mapper, Disk Salvage, Virus check, System Utils: Blitz V1.0 text editor, TimeSet, ACalc calculator Amiga Monitor V1.1, MeM Grab fast memory grabber. DirectoryMaster V1.1
● **APDC 15** - Icon utilities: full of icon files and creators. Some animated! Brilliant disk for icon manipulation.
● **AMICUS 24** - Sectorama - disk sector utility, Iconize V1.0 reduce a full screen pic to an icon, BMon system browser, Virus Check v2.21 checks disk & memory, Boing Machine.



Zero Virus on disk PDOM62

DEMO DISKS

● **PDOM 86** - The Memory Expansions Systems demo No1. Excellent graphics! Requires 1MB RAM.
● **PDOM 87** - The Memory Expansions Systems demo No2. Amazing graphics! Requires 1MB RAM.
● **PDOM 88** - The Ghostbusters demo. Requires 1MB RAM.
● **PDOM 89** - AMOS demo. Product demo from Mandarin of their games creator package for the Amiga.
● **PDOM 82** - Batman Remix demo. Sampled sounds of Prince's BATMAN.
● **PDOM 83** - Space ACE Demo an excellent demo of the game with fabulous animation and incredible sampled sounds!



● **PDOM 65** - Red Sector Mega Demo. THE best demo on the Amiga! A mega good demo that requires disk PDOM 66, but you only need 1 drive. Amazing graphics, fabulous sounds, astounding vector graphics!!!
● **PDOM 66** - See PDOM 65 for details.
● **PDOM 84** - R.A.F. - Royal Amiga Force Mega Demo, astounding! 2 disks but you only need 1 drive. Requires PDOM85.
● **PDOM 85** - See PDOM 84 for details.
● **FFISH 196** - Stunning digitised HAM pictures. Excellent! The quality is astounding.
● **PDOM 01** - The Walker Demo I is a mega animation demo that requires 1Mb RAM.
● **PDOM 02** - The Walker Demo II the mega mega animation demo that requires 1Mb RAM.
● **PDOM 06** - The Mahoney and Haktus sounds of the knome music disk II, great graphics and mega sounds. With a bouncy mouse pointer and things flying evrywhere. A really good demo with loads going on.
● **PDOM 40** - Northstar Fair Light mega demo III a 2 disk set of incredible demos! Needs PDOM40 and PDOM41. Including Mahoney and Kaktus with Blue.
● **PDOM 41** - See PDOM 40 for details.
● **PDOM 42** - DeathStar Blasting II - Enlightment demo a 2 disk set of mega mega good demos. Needs disk PDOM 43.
● **PDOM 43** - See PDOM 42 for details.
● **PDOM 44** - The Walker demo. This is the original 2Mb RAM, 2 Disk version. It is absolutely stunning! The 1Mb RAM version is on PDOM1. Also needs PDOM 45.
● **PDOM 45** - See PDOM 44 for details.
● **PDOM 67** - IPEC UK demo Disk 10 includes: Nice Scroller, Sunriders, 178 Bobluni and others.
● **PDOM 68** - Rebels Mega Competition demo includes: Pirazy, Nabob, Subway, Smiley, Aloha and Sin o'Delic.
● **PDOM 69** - HighClass UK compilation: Triangle, New BS1, Zoom First, W.O.W., RAF First, Spreadpoint, Subway/TNTand others.
● **PDOM 70** - Rebels demo: Nabob, Clones Demtro, Sunriders, Bloodsuckers, Flash and Vision Factory.
● **PDOM 73** - AGAtron Special disk 10: Star Trek Dry Dock Demo. Excellent! Mega! Brilliant! Prefers 1Mb RAM, but you will get part of the demo on a 1/2Mb RAM.
● **PDOM 74** - Star Trek the Starship Enterprise flying around in a circle.
● **PDOM 76** - Agatron Animation 14: Star Trek Shuttle landing on the SS Enterprise.Prefers 1Mb RAM, but you'll get part of it on 1/2Mb RAM.

GAME DISKS

● **PDOM79, l PDOM80 and l PDOM81** the StarTrek game! An amazing 3 disk fully working amazing graphics game!
● **FFISH 194** - Moria V3.0 the single player dungeon simulation adventure game. Requires 1Mb RAM.
● **FFISH 205** - Bally the arcade game, Battle Force V3.01 simulated battle between 2 robots. Chess V2.0.
● **SOFT 042** - Chinese Checkers excellent version.
● **SOFT 068** - Clue as in Cluedo, Othello, Klondike, Canfield and Cribbge.
● **SOFT 069** - Backgammon, Yahzee, TVision, Missle Command, Cosmo 2 and 3D Breakout.
● **SOFT 117** - Empire, Gravity Wars, Hanoi, Hockey, Bikoff, Jackland, Othello Master, Pacman, all brilliant PD games.
● **SD 21** - Monopoly.
● **SOFT 078** - Pac Man. Great implementation of the classic game.
● **SOFT 118** - Amoeba Attack, Lander, Gravity Attack, World text adventure and Bullrun a battle simulation.
● **PAN 29B** - Amoeba space invaders, CosmoRoids, Stone Age a Boulder Dash type, BackGammon, Chain Reaction, Master Mind, Reversi, Black Jack, Crazy Eights, Klondike, Jig Saw, Keno, YachtC, Daleks and Ratmaze.
● **SOFT 042** - Chinese Checkers excellent version.
● **SOFT 117** - Empire, Gravity Wars, Hanoi, Hockey, Bikoff, Jackland, Othello Master, Pacman, all brilliant PD games.
● **FFISH 259** - Escape From Jovi a fast action mega graphics games with stereo sound, hi res scrolling etc.
● **AMP 8**: Game Pack: 3 disks SOF68, SOF69 and SOF117. A 3 disk pack for only £7.50!

GRAPHICS DISKS

● **FAUG 42** - DBW Render a very good Ray Tracing utility.
● **SOFT 123** - Amiga MCAD V1.2.2 excellent Computer Aided Design package.
● **SOFT 022** - Disk Full of graphic utilities: Clip It! clip any part of the screen and save to disk, Filter Pics manipulate pictures with enhancers, edge definition, colour and size shifters, plus loads of excellent packages
● **SOFT 013** - Mandelbrot Explorer. Excellent full features mandelbrot designer.
● **APDC 13** - VDraw V1.19 brilliant painting program, Ray Tracer Generator, MCAD V1.2 an object-orientated drawing package, IFF to pieces jigsaw program, ROT 3D drawing program.
● **AMP 3**: Graphics Pack: 3 disks SOF123, SOF22 and APDC13. A 3 disk pack for only £7.50!

LANGUAGE DISKS

● **FFISH 171** - Sobozon C a port of the Atari ST version of this full K&R C compiler, assembler and linker. If has been tested on an A2000 and appears to work well. Not for the beginner due to lack of disk info.
● **FFISH 193** - Zc V1.01 modified version of the Sobozon c compiler from disk FFish 171. It now generates code compatible with A68k assembler and has a front end to allow easier useage.
● **FFISH 140** - Stoney Brook PROLOG v2.3.2, This disk contains the executables & libraries, In addition to providing a compiler SB-Prolog also offers advanced features such as dynamic loading, mixing of compiled and interpreted code, macros, extension tables & a debugging facility. The Source for SB prolog is contained on FFISH 140, but this is not needed to operate FFISH 140. SB PROLOG requires 1Mb of RAM.
● **FFISH 91** - The Adventure Definition Language (ADL).
● **FFISH 201 and FFish 77** - Draco V1.2 is a compiled - structured language reminiscent of both C & Pascal. A full interface to AmigaDOS & Intuition is supplied. Be sure to get both FFish 201 AND FFish 77 @ £3.00.
● **APDC 25** - Logo, XLisp, Modular 2, MVP Forth.
● **PDOM 60** - Modula II compiler. Apparently fully working, complete and ready to use version with on disk documentation and examples.

MUSIC DISKS

● **AMP 11**: Sonix Music Pack. Includes the PD player for Aegis Sonix music program and 4 disks full of music scores. A 5 disk pack for only £12.50!



DiskX on disk FAUG67

Most of the disks in this advert actually contain more files than are listed, The ad also only shows a small portion of our catalogue, we have in stock TBAG, AMUSE,APDC, FAUG, Panorama, Amicus, Slipped Disk, The latest Fred Fish and our own PDOM collection. So for details of the service and a free copy of the 48 page bumper catalogue send a Stamped S.A.E.
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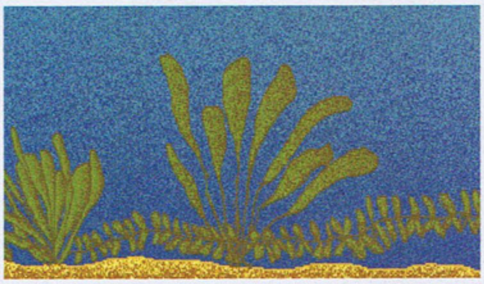
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Turn your Amiga into a fishtank with the *Fishtank Simulator* on Fred Fish's disk. Sadly this tank is empty because the fish are sprites and can't be grabbed, but they'll be there when you get the program.

TOP TEN PD

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8 INTROS #22 (533)
9 SHOWERING GIRLS (474)
10 BILBO CHART SHOW MUSIC (506)

PD UPDATE

For little more than the price of a disk, you could fill your software collection with some of the finest utilities and demos from the Public Domain. **RICHARD MONTEIRO** gets his hands on the latest additions and tests them out.

UEDIT

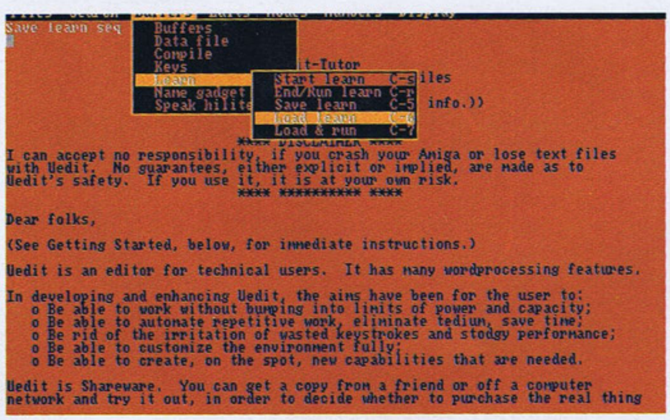
Fish Disk 254

Do yourself a favour, stop using Ed. The file editor included in the C directory on your Workbench disk is unbelievably unfriendly, so just give it a rest. Not only is it tedious to use, but someone forgot to add instructions on how to use it when the Amiga user manual was compiled. Ho hum.

There are numerous text editors in the public domain, and one of the best in our opinion, that has recently been given an overhaul, is Rick Stiles' *Uedit*.

In its latest incarnation, *Uedit* lets you edit up to 100 or more files simultaneously (memory permitting); reformat paragraphs; edit while up to 12 documents or regions are printing; undo; search and replace; cut, copy and paste regular, inverted or highlighted text; create new commands.

Features include online help, teach mode, split windows, interlace and overscan display, mouse scrolling and mouse cursor-placement, page-making commands, multi-column text displays, and much more.



Uedit: an excellent alternative to the Ed text editor... and one that's not going to cost you a fortune.

Perhaps the most important feature in *Uedit* is its ability to learn new commands. New commands are typed into a buffer and compiled (learned) virtually instantly. The possibilities are endless. You can teach Uedit to search for all double space characters and replace them with a single space, justify the document, place your address at the top of the document, add your name at the end of the document and save the results. The whole operation can be tagged to one key.

Uedit is fully configurable. For a fee, ready-made *WordStar*, *Scribble*, *VI!* (Unix editor) and *Gold Key* (DEC editor) configuration files can be obtained. These will turn *Uedit* into the text processor you feel most confident using. Of course, you could do the configuration yourself – it's easy enough.

FISH 251

GEORGE THOMSON SERVICES

While it's true most of Fred Fish's disks have one or two utilities or demos that will appeal to most, very few come crammed with items that will appeal to everyone. Disk 251 is one of those rare breeds; a real stonker.

On the disk you will find:

DEBUG

Jim Thibodeau and Larry LaPlume's symbolic debugger features, unsurprisingly, symbolic disassembly, simple expression parsing, multiple breakpoints, memory fill, memory dump, single-step trace mode, skip-over-subroutines options plus much more.

DISKSALV

A disk recovery program for all Amiga file system devices that use either the Amiga Standard File System or Amiga Fast File System. *DiskSalv* creates a new file system on another device and uses as much salvaged data from the original device as possible. This is version 1.42, an update to the version released on Fish disk 212.

LINSTROM'S MALARKEY

Also on Fish disk 251 you'll find a selection of programs written or adapted for the Amiga by Lloyd Linstrom and family. Included in this section are three Amiga ▸

TV GRAPHICS 1 & 2

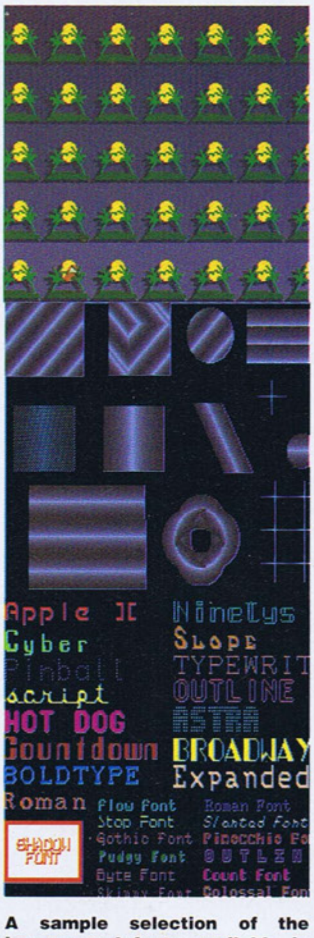
GEORGE THOMSON SERVICES

The TV Graphics disks contain clip art especially created for use as overlays on TV images. Of course, you don't have to use the graphics for that purpose, but designer George Bailey has spent ages ensuring that the images don't look garish or clash with a variety of TV pictures.

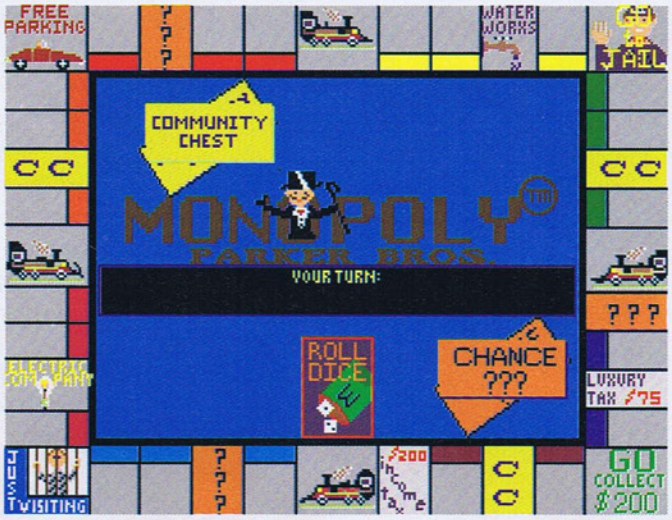
TV graphics disk 1 comes with three types of graphic images: complete screens, frames and parts (or brushes). Screens are full graphic images ready for instant use. Frames are small borders that enable you to overdub any video or graphic elements inside them. Parts are small pieces of computer art that can be defined as a brush and pasted on your own screens.

Several demo screens have been made up out of all three graphic elements; all you need do is direct the live action into the windows provided.

Disk 2 comes packed with Amiga-compatible fonts for use by most graphic, animation and presentation software. There are a selection of large, small, unusual and video fonts – something for just about all your DTV requirements.



A sample selection of the images and fonts available in the *TV Graphics* disks.



A full version of the *Monopoly* board game to play on your Amiga thanks to Ed Musgrove.

▸ BASIC games (*Spots*, *TOE* and *Worms*) and three programs (*Demon*, *Turmites*, *Mountain*) based on algorithms taken from the Computer Recreations column in the magazine Scientific American.

DISKSPEED

You can test your disk drive's speed and performance with this handy utility. The program will automatically create and update an ASCII database of results of all the tested disks.

FISH TANK SIMULATOR

Now I've seen it all! A program that turns your Amiga into a very expensive fish tank.

MONOPOLY

Ed Musgrove's program is a computer version of the Parker Brothers' classic board game of the same name. Ed had intended to look for a software company to publish the game, but Leisure Genius released a version before Ed had a chance of touting his wares. Story over.

ROADROUTE

This is a journey planner – in the same vein as *AutoRoute* – which takes a list of cities and known routes between the cities, and generates the distance and time it will take you to reach the desired destination. Only problem is, the cities are all in North America...

SHOWDISK

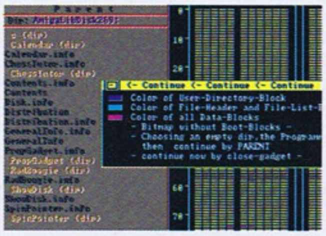
Fish Disk 269

With *ShowDisk* you get a graphical representation of the layout of sectors from files stored on a disk. The mapping is colour coded so that you can identify which sectors are used by the various files and directories present on the disk.

As many directories and filenames will appear in a window to the left of the screen; the list can be scrolled forwards or backwards to reveal further entries. Selecting a directory will open it and reveal any files contained inside. Selecting a file causes certain areas of the disk map to become highlighted.

Different parts of the file will show in different colours. For instance, directory blocks, file header blocks, file list blocks and file data blocks are all differentiated between.

A very user friendly utility which will help you understand how data is stored on disk.



Checkout graphically the location of files and folders on your disks with *ShowDisk*.

TBAG DISK OF THE MONTH #24

GEORGE THOMSON SERVICES

Here's another disk from the Tampa Bay Amiga Group's vast selection. This one is crammed with 14 hot programs. Because of space constraints only a few of the best or most unusual items on the disk are mentioned.

CLICKDOS – Yet another disk management utility program, but this one's excellent and only takes up 32k of memory. *ClickDOS* uses a single window, which can be iconified, on the Workbench screen and consequently doesn't gobble chip memory. Functions like Type and Show are built in; you can junk your C directory.

The sort of things you can do include renaming, moving, erasing and copying files and directories; creating directories; display IFF picture files and ASCII text files.

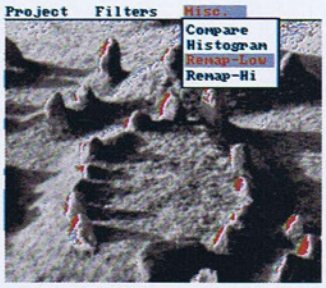
QVIEW – Another file viewer! As if the likes of More, Less and so on weren't enough Lyman Epp had to write another. Lyman's *QView* is special because, in comparison, it is far smaller than other file viewers. *QView* takes up a mere 3K. The reason being that it is written in Assembler; most other file viewers are written in C.

Qview features fast screen updates, keyboard control of all options, search and replace, and all the usual character and page scrolling facilities offered by similar utilities.

FILTPIC – This is an image processing system designed specifically to be used with digitised *Digi-View* low-resolution black-and-white IFF picture files.

When *Digi-View* stores a low-resolution black-and-white picture, it stores the image in 32-colour IFF format. Since the Amiga is capable of displaying 16 shades of grey, the *Digi-View* image only uses colours 16 to 31 from the possible palette range of 32. FlitPic assumes any IFF files it manipulates to be in this format. Images not of this format will give unpredictable, although occasionally interesting, results.

Once an image is in memory all manner of filtering operations can be performed. 'Averaging' produces an image based on the average pixel intensities using a three by three matrix. 'Binary' results in a high contrast black and white image based on a supplied threshold. 'Cross' will produce a new image using an edge detection algorithm; 'Sobel' and 'Roberts' are two other edge detection filters available.



Perform the filtering functions on your digitised images that *Digi-View* left out.

Other filter functions include Pixelize, Sharpen and UserMatrix. The UserMatrix is the most interesting as it allows you to specify a three by three kernel which can be applied to an image.

SPITE & MALICE – Cards anyone? *Spite and Malice* is a game which involves both luck and strategy. The object of the game is to play all of the 25 cards in your pile. These cards must be played to the centre of four stacks in numerical ▸

These are brief descriptions, disks may contain much more

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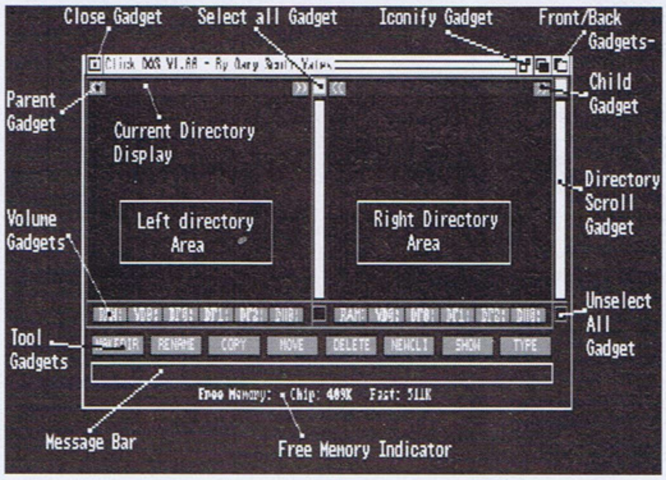
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order from ace to queen. Both the king and joker are wild, and may be placed on top of any other card. Your hand consists of five cards which may be played to the centre or to one of the discard piles. Discarded cards can be played to the centre, but cannot be moved from one discard pile to another. Your turn ends when you place one of your cards into a discard pile.

EGYPT RUN – It seems the pyramids have come alive and are out to take over the World. You are the World's only hope. It's your job to steer a buggy through the pyramid onslaught and destroy the master pyramid with your missile. Wacky!

CLICKDOS – is completely self contained – it doesn't require the use of any other programs, although it will communicate with Spool if present in the C drawer, and will even detach itself when called from a CLI.

TOING – Wonderful! You can have between one and 50 balls bouncing in random directions. Totally pointless, but thoroughly absorbing to watch. ■



Forget the Workbench or the CLI, *ClickDOS* provides you with virtually all the file management facilities you're ever likely to need. And all in 32K.

DEMOS CORNER

Here's where to find out just how powerful your Amiga really is.

INTROS DISK #23

17Bit Disk 550

Six superb mini demos from the likes of D-Mob, Level 4, Red and Black, Powerlords, Jester Bros and Unique. Just when you thought you were safe from any further Batman hype, the Jester Brothers spring on you the remix of the Batdance Remix. Meaner, moodier and more manic than before. You'll love it to bits.

SHOWBIZ

Fish Disk 261

A fun animation containing mice, a dancing alligator, a sheep on a trampoline and various other performing animals. The source file, in Director format, is supplied.

SENTINEL

Fish Disks 263/264

Here's an absolutely mammoth animation which requires at least 3Mbytes, and preferably 3.5Mbytes, of memory to run. It's huge, but also very slick.

The *Sentinel* is a large ray traced animation created with *Turbo Silver SV, Deluxe Photolab, Deluxe Paint II* and *The Director*. It consists of approximately 60 to 70 frames of animation which were rendered over a period of three and a half weeks. This is Bradley Schenck's entry to the 1989 BADGE Killer Demo Contest. It won first place.

Because of the size of the animation, it has been split across two disks. Two drives and lots of memory are recommended.

JUKE BOX

Listen to the latest sounds to come from your Amiga.

D-MOB DEXION MUSIC DISK

17Bit Disk 547

Another 10 tracks for your listening pleasure. A fancy scroller gives you something to watch while your ears twitch to the beat.

MUSIC DISK #3

17Bit Disk 546

A curvy lady in a tight bikini poses with a machine gun on the outskirts of a dense jungle; her voluptuous, ample body silhouetted against the full moon... Okay, so it sounds corny – but you've got to see the picture. Women in skimpy outfits is not what the demo is all about. Honest. It's simply the title screen to D-Mob's third music disk. There's only the one music track, but it's expertly mixed and lasts around seven minutes. The digitised data loads continuously from disk as it's needed. It's excellent.

D-MOB MUSIC DISK #2

17Bit Disk 554

You'll find 10 of the best sampled music tracks on this disk, including Bigbeat, Chord Chill, X-Tacy, Flying, Running Away, Jack to the Housebeat, Automatic Beat, Cozmo, the Edge and Techno. There's little else to say apart from pump up the jam.

INTROS DISK #25

17Bit Disk 553

Yet more demos for you to drool over. Guaranteed that after you've seen this disk you won't want to see any more BOB (blitter object) demos. There's something of an unofficial competition at present to see who can animate the most BOBs in real time. It's all a load of balls but we love it.

AGATRON ANIMATION DISKS

17Bit Disks 541/542/543

Each disk contains different animations; it's not necessary to have all three disks to view the animations. The reason for clumping the three disks together is that the Agatron collection is put together by Tobias Richter of West Germany. The presentation and operation of all the disks in the series is identical, so it's pointless wasting column inches on repetitive text. Star Trek fans will go ape for some of the animations on these disks; there are some beautiful detailed shots of the Enterprise and various other ships. Well worth a watch. ■

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In this month's music section **JON BATES** takes you on a guided tour of sequencing, but we start with **JASON HOLBORN'S** review of Microdeal's combined sampler and sequencer, *Master Sound*.

SOUNDING BOARD

Many thought that eight bit sampling on the Amiga had been pushed as far as it could go. With devices such as *Future Sound* and *Sound Trap* (both reviewed in past issues of AF), the sound quality obtainable from the eight bit sampler has reached its peak – many say sample quality won't improve until we see the arrival of 12 and 16 bit samplers. Could *Master Sound* prove them wrong?

Master Sound is a software/hardware combination that will allow you to digitise bursts of sound from most sound sources, including CD players, personal stereos etc.

The *Master Sound* sampling hardware consists of a large, cream coloured box that comfortably slots into the parallel port of your Amiga. At one end is the standard 25 pin plug for connecting the unit to the computer and at the other end, a single 3.5 mm jack socket for connecting the unit to a suitable sound source. Being a rather inquisitive chap at heart, I opened up the sampler hardware expecting to find a large chunky PCB. Surprisingly, only about a quarter of the interior is actually occupied – the rest contains nothing more than air. Perhaps Microdeal felt that a larger case would look more impressive? (it's not the size that counts – it's what you do with it!).

Sound City

Although *Master Sound* will happily work with existing software such as Aegis' *AudioMaster II*, Microdeal provide their own software to drive the unit. Unlike *Master Sound*'s main competitor, Omega Project's *Sound Trap III*, the software bundled with the unit is of a very high standard indeed.

The software is split into two distinct sections – the obligatory sample grabber/editor and secondly, a unique 'sample sequencer' which can be used to produce *Sound Tracker*-like tunes from short samples grabbed using *Master Sound* as instruments.

Grabbing All You Can

Once you've connected everything up, turned on your computer and loaded the software, the first thing you'll want to do is to grab your first sample. *Master Sound* will digitise sounds using sampling rates varying from 3 KHz right up to an impressive 55.9 KHz (same as *AudioMaster II*). The first thing that will strike you about *Master Sound* is the sheer quality of the samples – even at the lower sampling rates, *Master Sound*'s samples remain bright and sparkling.



The *Master Sound* main screen in all its glory.



Mix your own chart hit with the *Master Sound* sequencer – Fairlight eat your heart out!

Editing is pretty standard stuff, with the usual cut, paste and copying of sections of sample. However, *Master Sound* provides a selection of extra editing functions not usually found within a budget sampler. For starters, any sample can be overlayed (mixed) onto another sample, samples can be filtered (helps to make a sample sound less electronic or 'tinny'), faded in, out and compressed.

Samples can be saved either in RAW or standard IFF 8SVX format. For those of you who use sampled instruments within packages such as *Aegis Sonix*, *Deluxe Music* or even *Music-X*, *Master Sound* will even generate multi-octave IFF files.

Hit Factory

So once you've grabbed loads of sound samples, what are you going to actually do with them? Unless you're the proud owner of one of the three packages named above, the truth of the matter is that those samples will end up being nothing more than disk fillers.

However, with *Master Sound* you can put your samples to work with *Master Sound*'s own unique sample sequencer. Ok, Microdeal aren't the first to include such a program with their sampler (Datel's *Pro Sample Studio* includes a sampler 'Jammer'), but *Master Sound*'s sequencer is miles better than anything the competition has come up with.

The program works by turning your Amiga keyboard into a music keyboard (a bit like *Sonix*). Up to eighteen samples (instruments) can be stored in memory and are accessed by allocating them to keys on the numeric keypad – when you press a key on the keypad, the current sample allocated to the main keyboard is changed instantly.

Master Sound treats the Amiga as a four track tape recorder with a simple, 4 note polyphonic sampling keyboard tacked on to generate the sounds. To record onto one of the tracks, just select 'RECORD' and start playing – the sequencer then records your keypresses in real-time. Multiple instruments can be laid down onto a single track using overdub, although only one sound can be played simultaneously for each of the four channels.

Once you've mixed your potential chart hit, you can even hand it out to your friends using the sequencer player program that Microdeal so thoughtfully provide.

Sound Choice?

What more can I say? I'm impressed. The sound quality of *Master Sound* is astounding – sampling from a CD source, it produced some of the best quality sound samples I have ever heard from an Amiga (beating even those produced by the king of them all, Future Sound).

The combination of crystal clear sampling, a unique sequencer and an unbelievable price tag makes this the current number one choice among Amiga sound samplers – at any price. If you have ever thought of buying a sound sampler, then *Master Sound* is currently the best option. ■

MASTER SOUND
£39.95 ■ All Amigas ■
Microdeal 0726 68020

EVERYTHING YOU ALWAYS WANTED TO KNOW ABOUT SEQUENCING...

JON BATES leads the way in a comprehensive tutorial.

It would be fair to say that during the course of 1989, the Amiga established itself firmly on the map of serious music creating. As you are probably aware, not only can it create sounds but it can also organise them into songs, tunes, or whatever. And so it is that we launch intrepidly into one of our occasional series of tutorials.

This month it is the subject of sequencing that comes under the special Amiga Format spotlight, with particular reference to popular sequencers such as Music X and Track 24. The notion is that the tutorial will serve not only for those of you who have the software but that it will also be a guide to those of you are considering buying sequencing software.

First Principles

The principle of any sequencing software is easy: it records what you play and plays it back. Or rather it records all the data that has gone to make the performance and then replays that data, commanding the actual sound-generating device to make the sound just as you did with your fingers on the keys of a keyboard.

The devices that actually produce the sound can be split into two distinct camps. The one will use strictly the internal chip, the other an external instrument. If the former option is chosen then it could be that the qwerty keyboard is the simple inputting device: the Amiga is a totally self-contained sequencing musical instrument.

The more usual scenario is the latter: using a keyboard for external input of music data into the computer, then reproducing that by the sequencer playing back data to the instrument chosen. MIDI is the communication language that links instrument to computer.

Why Sequence?

Why use a MIDI sequencer when maybe a cassette recorder would do to capture your musical doodlings? Well, if you were only concerned with capturing acoustic instruments like pianos, saxophones or vocals you wouldn't need one. But in order to create 'the big sound' in your bedroom we need to turn to synthesized or sampled sound.

What is more, if you are using magnetic tape to record your efforts you will run into the problem that has been the bane of all recording engineers and producers since recorded sound was first tried out: noise. Tape has an inherent background noise that you cannot get rid of.

The noise problem becomes compounded when you try to overdub or bounce tracks together. The copying of one track onto another slightly reduces the sharp edge of the sound: owners of double tape decks will know what this is like, as even a CD when copied from tape to tape a few times sounds very woolly and full of hiss.

A MIDI sequencer does not suffer with these problems. When you copy or merge or overdub tracks on a sequencer all you are doing is copying digital data. If this is still confusing, remember that at all times when using a sequencer to play back an instrument, that instrument is actually being played when you hear it: you are not hearing a recording of the sound. Only the data that tells the instrument how to perform is recorded in the computer's memory.

Make Like a Tape

Sequencers are quite often laid out on screen with icons and buttons that resemble the common-or-garden cassette player. Play, Record, Fast Forward and Rewind are often represented with cute little representations of the controls of the recording machine.

There will be a counter to give you the position in the track you are recording. Often these are calibrated in bars, beats and fractions of beats, but more sophisticated programs such as Music X will also count down in hours, minutes, seconds,and fractions of seconds to line up with SMPTE synchronization code, the universal time code used in the video, television and film.

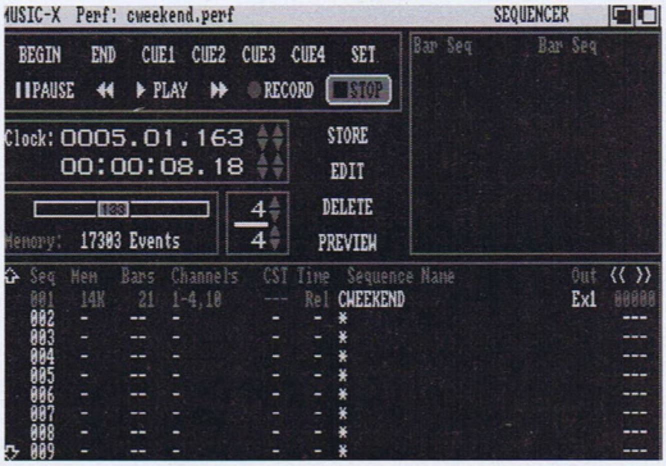
The main screen should also have some sort of track layout. Since MIDI functions on 16 channels one would think it feasible to have 16 separate instruments playing together. Correct. But with an Amiga you can have up to four channels of internal sounds as well, so more tracks are needed. The usual case is to have either 24, 32 or 48 tracks able to be played simultaneously, apeing the configuration of multi-track machines in recording studios. As well as doubling some instruments up on the same MIDI channel it is possible to have, with some sequencers, more MIDI system loops. These are often called Export channels. So with maybe 64 channels of separately-controllable MIDI to go at, 48 tracks might seem small beer.

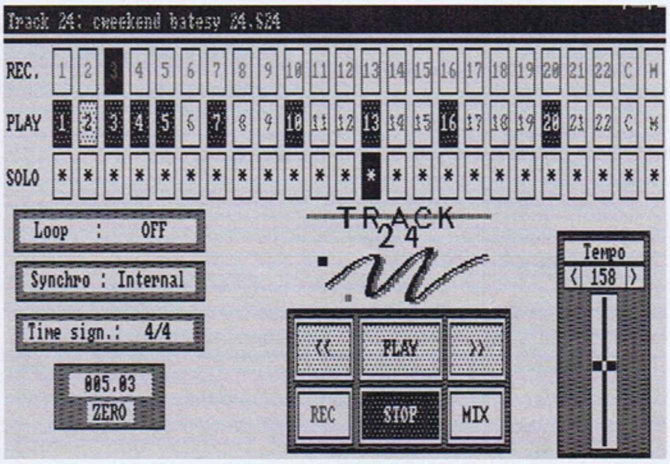
Setting Up

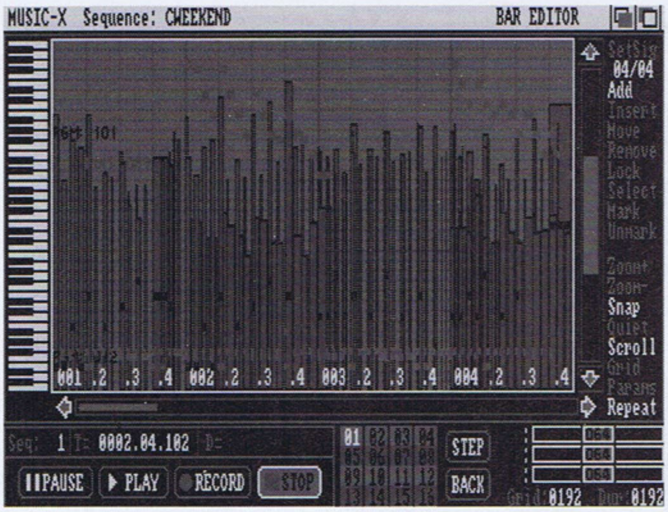
Most, if not all, sequencers come without a MIDI interface. So when you buy one, remember any Amiga MIDI interface will do since they are all compatible with MIDI software. You might like to check out Jason Holborn's recommendations in Issue 6: there are plenty of others to choose from as well.

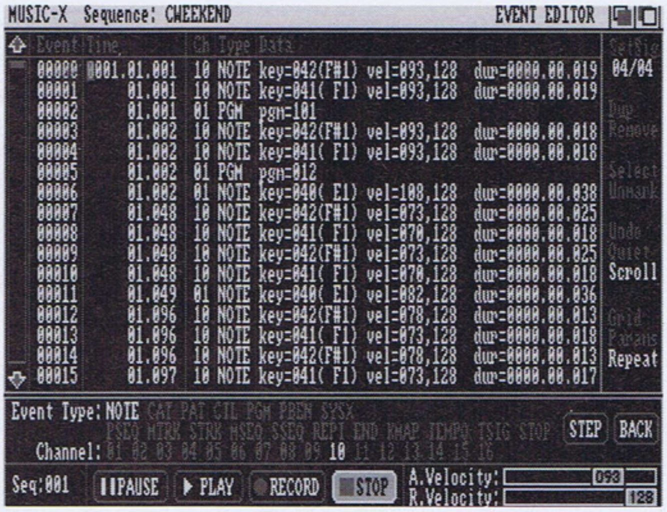
Having made sure that you have your MIDI connections the correct way round - that is, OUT of the instrument goes IN to the interface and OUT of the interface goes IN to the instrument - you are ready to record. Or are you? You will need to check that the MIDI ▶

The main screens for Track 24 and Music X. Track 24 is initially the more straightforward to operate but doesn't have the immense potential of Music X









Displaying their wares: the same piece is put into both Track 24 and Music X. Music X can cope with both a graphic display and data stream of events.

channel that the sequencer is going to play back on is the same one that the instrument is set to receive on. Sequencers will record on whatever MIDI channels they are sent but when they send back the data it will have been filtered to only work on the channel that it has been told to send.

Record

Assuming that all is well, hit the record button and play away. Most, if not all, sequencers have a 'Metronome' function that ticks away loudly to give you some semblance of a beat. You might find this off-putting at first but there should be a way of turning it on and off. Some sequencers will send this metronome out as a MIDI note so if your instrument suddenly squawks into life on one note don't be too surprised.

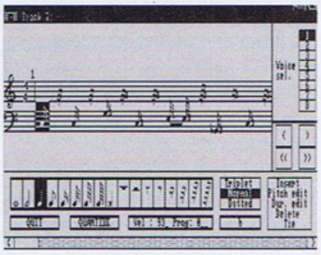
There is usually provision to have a few bars of count-in before you start. When you have finished your efforts hit the stop button, rewind back to the beginning and press play. You should hear your efforts back in all their glory. Not too good? Well try again several times until you get the hang of it.

After a few tries you will probably feel the need to correct your mistakes: you might have slipped in the odd bum note or they might have been just slightly out of time. Well you could record it at a slower speed and play it back at the normal speed as it won't affect the pitch of the instrument. Still can't get it right? You need to actually look at the notes and correct them.

Edit

This is where the Amiga sequencer will score hands-down over a small dedicated sequencer because editing and track-merging on these is rather like trying to park a Cadillac in a garden shed: you can't see what you are doing and there ain't enough room. Sequencers can adopt three methods of displaying the notes:

1) Traditional music notation.
2) A bar graph style of display.
3) A list of numerical data arranged into a set of tables that relate to each note.



Track 24 is reduced to single line traditional notation.

The merits of each can be listed as follows. The first is fine and very quick if you can read music well but hopeless if you can't. It should also be borne in mind that traditional notation is only an approximation of the exactitude of the notes (hence all the arguments about 'interpretation' in Classical music), and you would still need some other form of display to show you all the non-note types of events that a sequencer can record, such as pitchbending, changing the sounds, the velocity and aftertouch applied to each note.

The second is a pretty decent compromise. You can usually drag the bars around and change the notes much more accurately. Somewhere on the display will be a piano type of keyboard so that you can work out the pitch of the notes and spot the offending items. But it has the same disadvantages as the first in that it will miss out anything that is not a note.

The third is obviously the best for displaying all the information that was recorded and is really indispensable for any sequencer. But if this is your only means of showing the data it could get pretty tedious running through it. To edit anything you really need to hear it played and then pull it up at the point of error. A data stream scrolls down the screen so fast that it is usually just a blur. Picking out erroneous events can be quite time-consuming and hence frustrating.

The Compromise

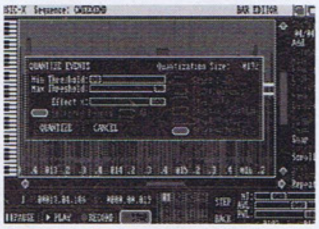
What we need is what diplomatic circles and foreign offices achieve throughout the world in times of stress or world tension, a compromise. A display that combines or lets you flip from one sort to the other, so you can home in on the dubious section very quickly, make a few sweeping changes and flip to the data display for the final touches.

As well as correcting the notes and other events it should be possible to insert anything in step time or to simply change anything you like: beef up a drum beat, change a sound. MIDI will change sounds for you and in some cases alter the overall volume.

In the best of sequencers you can alter many other aspects of the sound, even if your inputting keyboard will not send those alterations itself. For example you might want sustain added to a chord or the volume to be reduced for a particular section. Nowadays it is no surprise to find that you can add vibrato, pan the sound in stereo, slide the pitch from one note to the next, detune sounds and lots of other functions depending on what the performing instrument is and how well you can read the MIDI implementation chart that came with it!

Correction!

The most widely used function in the editing department is the Quantize facility. Quite simply, what this does is to put the events played through a 'correcting' factor.



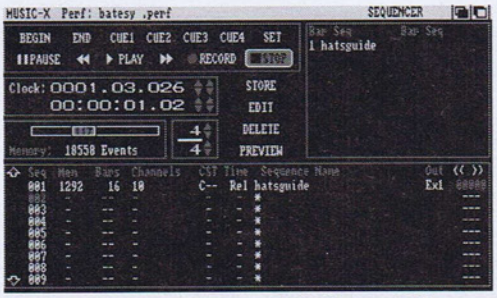
Some of the quantizing options of Music X

The easiest way to demonstrate this is when it is used on the actual timing of the notes. Record 4 bars of hi-hat struck on every beat and then listen back to it. More than likely one or more of the beats is slightly out. Since you want an exact pattern from the hi-hat on every beat you will need to select a quantization factor equivalent to a quarter note (crotchet). By executing the function, what happens is the Amiga will compare your timing with the correct timing and shuffle up your beats to the nearest quarter note. Simple.

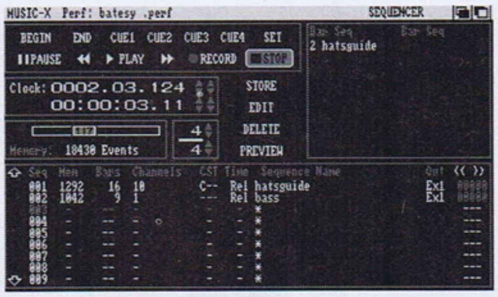
Well... not quite. Because although it may have moved the

DON'T GET MIXED UP!

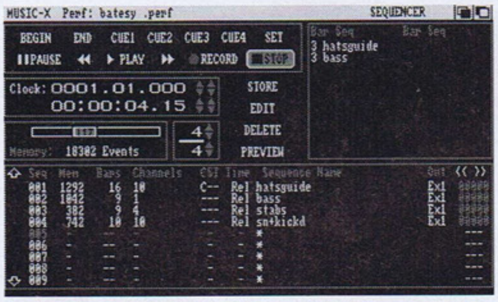
It is as well to have a clear distinction in your mind between sampling and sequencing as the Amiga sequencers and music packages often offer both under one roof. Sequencing is the reiteration of the data relating to the notes that have been played. Sampling, or the playing back of samples etc, is the recalling of the actual sound digitally preserved. It should be noted that sampling can create as much background noise, if not more in some cases, than magnetic recording. Await a tutorial on sampling in the not-too-distant future.



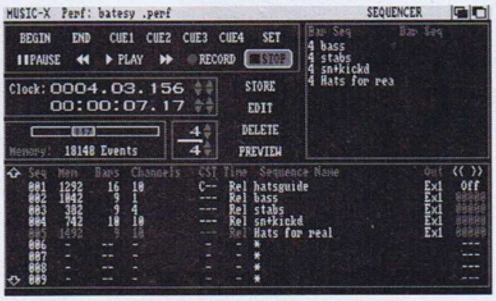
First a guide hi-hat track was laid down, 46 bars of straight beat looped endlessly.



Then the bass line was added.



After a few stabs were laid over the bass, a punchy snare and kick drum were added.



Finally the matching hi-hat rhythm was put in and the guide track was muted out.

starting time of the notes it may not have moved the ending of the notes. It could have stretched or shortened the notes to start correctly: in our hi-hat example this won't matter but for long sustained notes it could be quite drastic. OK, you need a choice of whether or not it moves the whole note with duration intact. And while we are there you might as well be offered the choice of altering just the duration of the notes, the ending of the notes and combination of these. Music X has a whole host of quantization options.

The Quantize function is probably the most overused and misused part of the whole sequencing pile of beans. It is this function that brings the often quite justified criticism that music using computers is boring. Why? Well, if overused, it lines all the notes and timings exactly so that they are incredibly monotonous. You can quantize the notes, the velocity and feel of each note all with the press of the quantize function.

To get round this, what is required is a degree of inaccuracy that can be used to vary the quantize. Programs like Music X can now even thrown in a 'Randomize' feature that can be called in varying strengths to add life to monotonous tracks. If applied sparingly to the velocity of notes it really adds a lifelike feel to drum beats and patterns.

Building Up A Track

My favoured method of working is to start with a guide drum track, usually hi-hats in either eighth or sixteenth notes. I usually put down about four bars and quantize it quite heavily. This is then copied forward or looped to give me a bit more than I need. I nearly always work on sections of a piece and chain them together at a later date. However I can use the hi-hat guide on any section as I leave it on a separate track.

Next stage is either the main chords or bass and I always spend some time sorting out which sound I am going to use. Each sound usually makes you play in a slightly different way. If it's the chords that go first, I slow the tempo for recording down a little and check that the notes go down together and that there are no notes hanging on too long. This affects the start of the notes and I usually apply only about 80% accuracy if the software will let me.

The bass has a similar treatment except that I may well quantize it very accurately. The basis of many tracks is the co-ordination between the bass and drums and it is as well to get them spot on. Quite often it is a good idea to rescale the velocity for the bass as it sounds a good deal punchier with the initial attack increased. In Music X this is achieved from the velocity scaling module.

To complete the rhythm basics of this I return to the drums and build them up starting with hi-hats again if necessary. Then on the next track I record the snare and bass drum. These often need velocity scaling and I use the event editor with the data stream to fine tune any beats that sound weak. If any drum fills are required I make these up on a separate pattern and fit them in by muting the main drum sequence at the same time that the fill starts, turning it back on at the begging of the next complete bar after the fill has finished. You can put mute commands in with Music X and other sequencers have similar configurations

Check your Parts

Back on the main page I then compare and contrast the individual parts, listening for parts that don't gel and blend well. Most sequencers let you switch the individual patterns on and off. In Music X you are usually better off doing this from the top right-hand sequencer section.

If the volumes are out of sorts it's a good idea to return to the data stream and insert a volume control at the beginning of the part. This is achieved with a control command number 7 followed by a suitable value: a quick experiment will determine just exactly what value will sound right for that instrument. Note that older instruments may not obey the MIDI volume control command, to be sure check the MIDI implementation chart.

It's then a case of repeating the procedure for the other sections of the song. Quite often I will leave a separate track for the lead line as it often sounds too forced if it is played from a chained sequence: smooth notes can get abruptly chopped up as the sequencer jumps from pattern to pattern.

For the first few try-outs it is really best to try simple ideas and learn how to combat problems as you go along. You might like to experiment by putting in patch change numbers to add variety to the sounds: sounds can usually be changed without too much hassle although sometimes it can lead to notes hanging on if the sound changes while a note is still playing.

Take Your Time

Like many computer programs, sequencing software is usually powerful, To get to use any of them successfully it takes time. One is forever humbled into a feeling of inferiority when the demonstrator in the shop or at the computer fair whizzes round the screen and produces amazing results in seemingly no time at all. You should see demonstrators and others (myself included) when faced with a brand new program, an unfamiliar layout and a different internal architecture to one you're used to. Like a word processor, once you get used to using a sequencer, you'll wonder why you bothered with tape decks or the unfriendly sequencers built into many single keyboards. Have fun!

LOADSANOISES

Up until a year or two ago it seemed that it was the privilege of the rich and famous to run a MIDI sequencer to its full capacity. The reason was that for each MIDI channel you used, you needed a separate MIDI instrument, be it a drum machine, synth or tone module. However with the advent of the multi-timbral module, all this has changed.

A multi-timbral module can produce several sounds simultaneously on separate MIDI channels and therefore subject to individual control, although there may be a limit to the number of notes you can play simultaneously.

There are many such instruments now on the market from the lowly single keyboard to the 'workstation' concepts of Yamaha, Roland and Korg. Roland have recently launched a series of modules designed totally for use with computers like the Amiga. The flagship of their range, the CP-M 64, will produce no less than 15 instruments (including a full-ranging drum kit) simultaneously with built-in reverb effects with up to 63 notes sounding all at once. Once you start stacking a few multi timbral devices together you soon run out of MIDI channels. The more tracks that your sequencer can provide, the better.

INFORMATION STATION

Hyper-Media is the latest buzz word to hit the industry with both Apple and Commodore pushing their machines as the ultimate in multi-media workstations. JASON HOLBORN takes a look at the Amiga's first true Hyper-Media system, *UltraCard*.

It's no wonder people feel threatened by computers – the plethora of jargon awaiting the unsuspecting first time computer user is unrivalled within any other industry. Even Amiga owners, who have grown use to a mass of new jargon (before you bought your Amiga, how many of you knew about such things as Direct Memory Access, Multi-tasking, WIMP systems, MIDI etc?), the computer industry still manages to churn out new jargon at an alarming rate.

The latest buzzword to add to the ever increasing lists of jargon is that of Hyper-Media. Hyper-Media is rapidly becoming one of the industries fastest growing areas and, as the owner of a machine that is very much at the forefront of it all, it's time to put on the old tin hat and prepare to be bombarded by a stream of new packages promising to turn your humble Amiga into the ultimate in Multi-Media computing.

Hyper-Media Explained

All this talk of multi-this and hyper-that is all very nice, but isn't it time someone actually explained what all the fuss is all about? For starters, what precisely is Multi-Media and Hyper-Media? And what is a Hyper-Text processor? Read on for the answers.

Hyper-Media and Multi-Media are very much the same thing. The theory behind a hyper-media system is that a single workstation (in this case, the Amiga) can control data in different formats – ranging from the conventional text and numeric data, to sound, graphic and video data stored on video disk, CD ROM, CD Audio and other optical media. A Hyper-Media system provides an object-orientated front end (the Workbench is an example of an object-orientated front end) that can control all the different forms of media from within a standardised user interface.

What we basically have with a Hyper-Media system is a form of programmable relational database that can handle data in any form – not just as text, like a conventional database. However, Hyper-Media is much more than this. For starters, a Hyper-Media system can be used to pull together previously incompatible programs into a functional system that can provide communication between the different elements within that system – one program can be used to indirectly control the actions of another. The aim of Hyper-Media is to provide a totally flexible environment for the creation of any application that requires complex linking of information in any form.

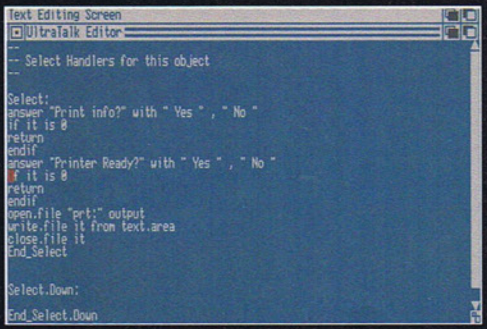
Hyper-Text is one of the most powerful tools within the Hyper-Media toolkit. Basically speaking, any word, phrase or sentence within a section of text can be linked (associated) with any Data within the Hyper-Media system. For example, you could tell Hyper-Text to link the word 'Education' with any data within the system that is associated with education – a database of courses at a University for example.

Probably the most famous Hyper-Media system of them all is the *HyperCard* program on the Macintosh. Although this system has now been superseded by the new *SuperCard*, *HyperCard* has proved immensely popular amongst Mac users.

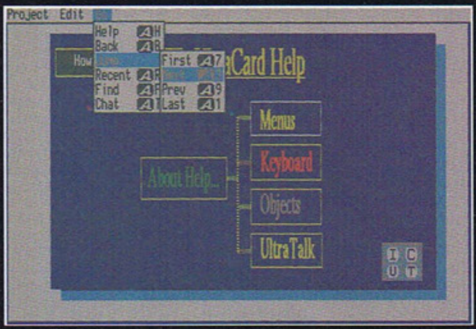
Intuitive Approach

UltraCard, from Intuitive Technologies, is very much an adaptation of the Mac *HyperCard* system, enhanced for the Amiga. Intuitive Technologies describe *UltraCard* as a "multi-tasking hyper-media information construction set", which is an ideal description of the program's capabilities. Using *UltraCard* is so very similar to *HyperCard*, that anyone who has used that system will feel instantly at home with the program.

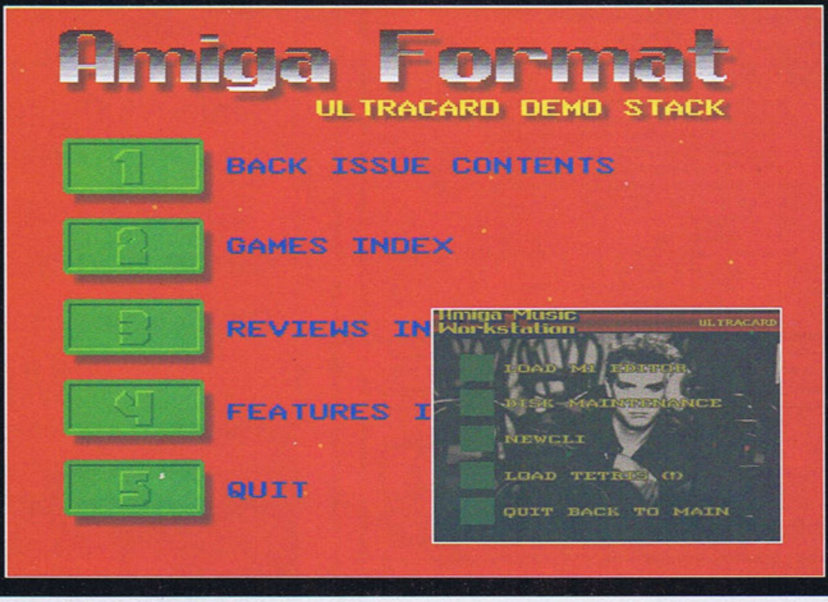
UltraCard allows you to bring together a collection of data within what it calls a 'Stack'. A stack consists of frames (pages) of information that can be linked to other data within the system. The information within a frame may be graphic (structured and bit-mapped), audio (Amiga sound samples) and textual. Textual information can be single line or multi-



The UltraTalk Editor in action. It may not look as pretty as the rest of UltraCard, but UltraTalk is the workhorse of the UltraCard system.



Although the UltraCard manual is nothing to write home about, the inclusion of a help stack makes the learning process quicker and less painful.



Our demo stack in action. With a little bit of creativity, some astounding results are possible.

(Inset) Name your application needs and chances are that UltraCard will handle the problem perfectly.

line and include Hyper-Text links.

A Typical *UltraCard* stack would consist of one or more frames that contain 'buttons' (also called 'objects') that are used to access the information within the system. These rectangular buttons can be placed anywhere within the frame and are controlled using a script file that is automatically associated with the object. When you first create an object, the script file contains nothing more than a blank template that must be set up to carry out particular tasks using *Ultracard* commands. The language used by *UltraCard* is called UltraTalk, and is basically a BASIC-like mini programming language that is geared towards information and resource handling.

At first glance, UltraTalk looks simple, but after a while, you'll soon realise the potential power locked away within its commands. UltraTalk contains loop and decision making constructs, information handling commands plus extra commands designed specifically for hyper-media applications. External programs can be called in and run with a single command and A-Rexx commands issued. UltraTalk even allows a stack to control, and even modify, itself!

For purely cosmetic reasons, *UltraCard* even includes control over how frames are displayed with the inclusion of 15 visual effects such as wipes, zooms and others.

Creating a Stack

Constructing an *UltraCard* stack is simplicity itself, and can also be alot of fun. Even those who would have previously been bored to tears with such a task will find the process of constructing a system from *UltraCard* quite enjoyable as the Hyper-Media concept encourages creativity in all forms.

When you first create an *UltraCard* Stack, the very first frame that you create is taken as the root of the system – every time you use the system, *UltraCard* will automatically jump to this first frame. The first thing you will want to do is to add a backdrop to the frame, which can be any standard IFF picture file (the frames shown within these pages were created in *Deluxe Paint 3*). Once the backdrop has been loaded, it's time to add one or more buttons to the frame. These buttons can either be completely transparent, filled with a graphic or contain the name of the object.

The creative scope available is certainly wide. You could, for example, use a picture of a car engine as a backdrop and then create transparent buttons over the major components. Each button could then be programmed to access additional frames containing information on the particular component.

Talkative Programs

As discussed earlier, a true Multi-Media system must provide a means of driving external devices such as video disk players, CD ROMS etc. Because of Apple's standardised control architecture, *Hypercard* on the Mac will directly control most external storage mediums. Although *UltraCard* does not directly provide the drivers necessary to use such devices (mainly due to the lack of any agreed standards), *UltraCard* gets around these incompatibilities by making use of the A-Rexx system. As long as the device drivers provided by the hardware manufacturers support A-Rexx, *Ultracard* can take advantage of the device.

A-Rexx, for those of you who have not encountered this wondrous program, is a system for providing communication between any programs that support the A-Rexx standard. Any program that supports A-Rexx can be directly controlled from another by sending commands through an A-Rexx 'communication port'.

Although A-Rexx was not developed by Commodore, the system has now been adopted as an Amiga industry standard, and will actually be built into the operating system with the eventual release of version 1.4 of the operating system. Already several third party software vendors have included full A-Rexx support within their products – NewTek's *DigiPaint 3* and the excellent *Cygnus Ed* are two examples. When 1.4 is eventually released, expect to see many more packages (including programs such as *Deluxe Paint*, *Professional Page* etc) modified to support the A-Rexx standard. If programs are not modified, they will become obsolete within the Amiga market.

Applications

So what kind of people are actually going to want to use *UltraCard*?, and what applications would most benefit from the Hyper-Media revolution?

The kind of people I can see using *UltraCard* professionally are those who need to produce information systems such as the point of sales/information systems produced by Xebec. For example, *UltraCard* could be used to produce a point of information system for an art gallery. You could move through the system, viewing digitised pictures of all the pictures within the gallery, information on the artist and even listen to an interview with the artist stored on CD.

So you want to view a particular type or work? Simple, just click on the word describing the work of a particular artist within a text file and the Hyper-Text system presents you with a list of paintings of that type within the gallery. Within a well designed Hyper-Media system, you could never end up at a dead end – the system would just keep on jumping through the information available until you've had enough and choose to quit. Pretty amazing stuff!

In order to allow users to create stand-alone applications, Intuitive Technologies include a sort of run time system called the *UltraCard Browser*. The *Browser* program can be freely distributed amongst third party users of your *UltraCard* stacks.

UltraCard can also be used to implement a system that can completely shield the user from the user interface of the computer. Using an autoboot hard drive, an Amiga-based system comprising of several applications programs could easily be tied together without the user ever having to see or use the Workbench.

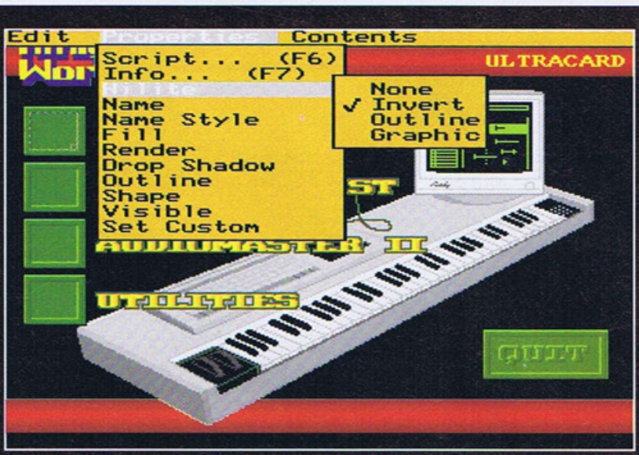
Conclusion

Occasionally a product arrives on the Amiga that is so revolutionary that you just cannot afford to ignore it – *Deluxe Paint*, the *Video Toaster* and *Music-X* are three examples. *UltraCard* has the potential to become one of the most important Amiga software releases ever.

UltraCard certainly isn't without its faults. For starters, the program is rather unstable on a machine with less than at least 1.5 Mbs. Although the program will function on a megabyte machine, don't expect to produce anything particularly complex.

However, like most multimedia systems, the true power of the system will not be realised until people actually start using it. The applications for such a package are endless and really are limited only by your imagination and ingenuity. If you are prepared to put in the time learning the darker secrets of *UltraCard*, the results that you can produce are simply breath-taking. ■

ULTRACARD 1.5
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The UltraCard 'Modify' mode in action. Here, we're editing the attributes of a button.



The UltraCard Control Room. This is the default stack that UltraCard will attempt to pull in every time you load the program. From here you can access the help pages, view application suggestions and ideas, and much more besides.

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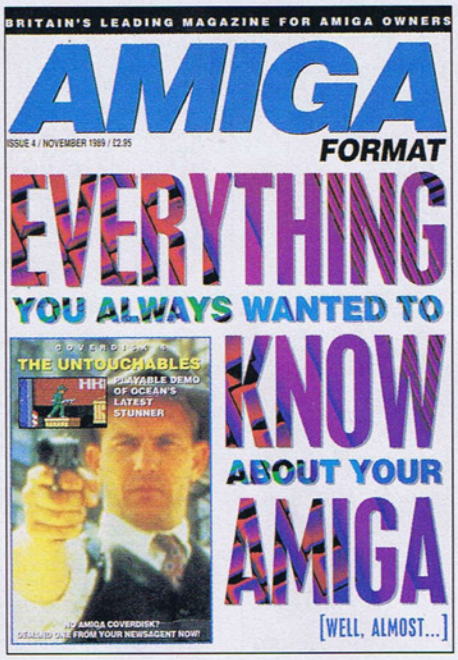
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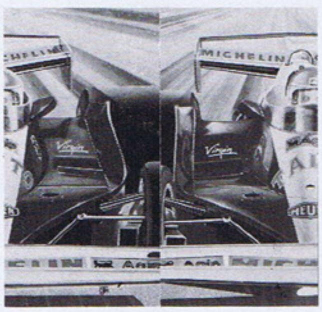
Now that the winter months are drawing to a close, you'll be wanting to get the most out of your games before you go out to cavort in the spring sunshine. But how can you do that if you're still stuck on Level One? Read Gamebusters for some useful tips, that's how.

CONTINENTAL CIRCUS

Got those "left on the grid while everyone else screams off into the distance" blues? Then follow this advice for a fast grid start.

When the FIRST red light comes on push and hold the joysick forward. When the SECOND red light comes on release the joystick. As soon as the green light flashes on, push the joystick forward. The faster your reaction time, the quicker you will accelerate.

NC Hughes
Reading



STRIDER

Avoid sections of the game that are proving too difficult by half with this tip.

Pause the game by pressing F9 and while the game is paused hold down the Help key, left Shift and 1. Unpause the game and you can now jump to any level by pressing the number of the level you want (1-5). You can also jump to various positions within the level by pressing F1 to F5.

George Christodoulou
Great Yarmouth, Norfolk

BATTLEHAWKS 1942

Flight simulators aren't the easiest things to get to grips with at the best of times, never mind while hordes of enemy planes are attacking from all sides. A player's guide is in order for such a game. Oh look! Here comes one now...

1. One useful thing to know is the promotion levels relating to the missions. Some ranks are only given to certain nationalities, but for the most part they're the same for both Japan and America. The ranks are, CADET, ENSIGN, ACTING LIEUTENANT, LIEUTENANT JUNIOR, LIEUTENANT, LIEUTENANT COMMANDER and COMMANDER.

2. Learn the characteristics of each plane before embarking on combat missions. While Japanese aircraft are generally more manoeuverable than their American counterparts, they don't have the same sturdy level of protection. Another point to remember is that the KATE torpedo-bomber has no front-firing weapons, so think twice before using this plane.

3. A plane won't necessarily burn up or disintegrate before it crashes into the ocean. Sometimes the pilot can be shot while still flying, so that his vessel will plunge into the Pacific with little apparent damage. Keep a look out for pilots attempting to trick the enemy by faking a crash – the sneaky devils!

4. On attack missions, it is sometimes better to devastate the enemy C.A.P. before beginning your own attack run. Other pilots in your squadron should meanwhile have carried out their own bombing runs and eliminated some of the opposition. If they have, then life should be a lot easier, since damaged ships fire little or no flack. It is better to bomb an undamaged vessel, even if it isn't a carrier, because there is a good chance that ships already on fire will sink anyway. Also, your chances of promotion are much greater if several enemy vessels have sunk or been set on fire.

5. Torpedo hits generally do more damage than dive-bombing, because they hit vessels at a more vital point below the waterline. When torpedoing a ship, try to release the missile at the last possible moment. This will cause the maximum damage and means that the ship has less chance to manoeuvre and dodge the attack. There is a good chance that a ship will sink after just one hit using this tactic, especially if you are using the LONG LANCE type torpedo.

6. Bombers are formidable opponents, since all except the Japanese KATE bomber are armed with front and rear guns. These planes are vulnerable to attacks from the side, but this tactic isn't always possible. Another way to get them is as follows: ▶

CHASE HQ

Can't quite get the speed as high as you'd like to catch those villains? Well just press the Space Bar a few times just as you start to send your speed up to about 900 km/h. If you don't think that you get enough turbos for this extravagance, then press the Space Bar several times when the music on/off screen appears to get some for free.

Chris Ross, Stockport and
John Briggs, Tyne and Wear



Fly behind and slightly below the enemy plane, as their rear guns won't be able to turn far enough to shoot you. Now when you get in range you should be able to pick them off with relative ease. If any planes break away from the formation to get away from your shots, then this will leave them open to a side attack. This technique is difficult to use against torpedo-bombers, as they fly close to the surface of the ocean while attacking.

7. The more explosions occur on the decks of ships, the more chance they stand of sinking. Hanging around blasting the decks of ships increases the possibility of them sinking, so it's a good idea to inflict as much damage as possible on the ships as quickly as you can, then at least one of the ships will have sunk by the end of the mission.

A CARRIER will normally sink after taking three torpedo hits. A BATTLESHIP can be sunk using a single torpedo, particularly if it is launched from close range.

8. If an enemy plane hassles you and causes problems, dive towards the ocean and any nearby ships - even if they're the enemy. You'll have to dodge the flack, but so will any planes attempting to follow you. They'll be so intent on firing at you that they won't avoid the flack and will get it in the neck from their own side!

9. Japanese pilots occasionally attempt kamikaze attacks on allied shipping. This is usually done for a couple of reasons – either they've suffered heavy losses early in the mission or they've missed with all their warheads. Occasionally, the pilot of a badly-damaged plane will aim it at a ship and bail out just before impact. A kamikaze attack causes so much damage that a ship may sink straight away. Kamikaze tactics are tricky but the squadron leader is often well rewarded. Remember only to adopt this tactic on the 16th ATTACK mission – just before retiring.

10. Here's a way to dive much quicker than usual – useful for getting out of tricky situations. Begin your dive as normal, then switch to the rear gunner. The altimeter will now spin round much quicker than usual until you switch to front view. This also works when objects in the distance seem to take a long time to arrive.

SN Hardy
Sheffield

OPERATION THUNDERBOLT

Think of it - the plight of the captured hostages just because you can't get past the helicopter on Level Two. Never fear! Here is a way to storm through those Arabs without a scratch.

First get a high score and enter your name as either WIGAN NINJA or EDOM TAEHC. This will give you infinite men. If, on the other hand, you think that the game's too easy, then enter SPECCY MODE for a much harder mission.

All you people who are having trouble getting a high score at all, never mind entering a cheat code, then enter this listing and save it. Insert OPERATION WOLF Disk One in Drive 0 and RUN the program. After a few seconds the screen should go black and then the game should load as normal, with the exception of infinite energy.

```
10 DIM CODE%(255)
20 FOR=0 TO 95
30 READ A$:A=VAL("&H"+A$)
40 CODE%(N)=A
50 NEXT N
60 CHEAT=VARPTR(CODE%(0))
70 CALL CHEAT
80 REM ENTER THIS LISTING AND SAVE FOR FUTURE USE
90 REM INSERT OPERATION THUNDERBOLT DISK AND RUN
THIS PROGRAM
100 DATA 70FF,2C78,0004,4EAE,FEB6,2200,5280,6772
110 DATA 4BFA,00EE,3AFC,0400,429D,3AC1,93C9,4EAE
120 DATA FEDA,2AC0,2A8D,2B4D,0008,589D,4295,4BFA
130 DATA 0090,1ABC,0005,3B7C,0030,000A,41ED,0038
140 DATA 2B48,0006,41FA,0060,7000,7200,43FA,006A
150 DATA 4EAE,FE44,4A80,662A,700C,99CC,6126,7002
160 DATA 49F9,0007,0000,611C,397C,5340,0030,297C
170 DATA 343C,4A69,0032,297C,31C2,73BA,0054,4EEC
180 DATA 000C,4E75,43FA,0032,3340,001C,234C,0028
190 DATA 42A9,002C,237C,0000,0400,0024,337C,0030
200 DATA 0012,4EEE,FE38,7472,6163,6B64,6973,6B2E
210 DATA 6465,7669,6365,0000,0000,0000,0000,0000
```

Mark Lawrence
Basildon, Essex

QUESTRON II

Not one of the most up-to-date games available, but still has its fair share of followers. If you are a fan that hasn't a clue what to do, then follow this solution.

The first step of the quest is to arm and protect yourself. You need money for this, which can usually be obtained be gambling at the Wizard Squares. Octapoint is about the cheapest place to buy. Ropes and hooks are useful, since you can't pass mountains or climb pits in the dungeons without them. Stock up about 3000 food - this should last you on your quest, but you will need to restock if you are killed. It's also a good idea to keep your money in the bank in case you are killed.

The second step is to visit the Hall of Visions in Redstone Castle. Use the Gold Key to unlock the door and speak to Mesron.

Next go to Seacrest or Lyton and stock up on Hit Points. Visit Octapoint for Magic Missiles and Fireballs. Enter the Rivercrest Tomb and find Morle, who will then ask you to find the Orb. However, this can't be done until you've returned the Wand of Power to Mesron. Take Morle's key, escape from the tomb and enter Redstone Castle. By the way, it may be a good idea to take the Amulet and the Chalice of Arvyl from the tomb at this point.

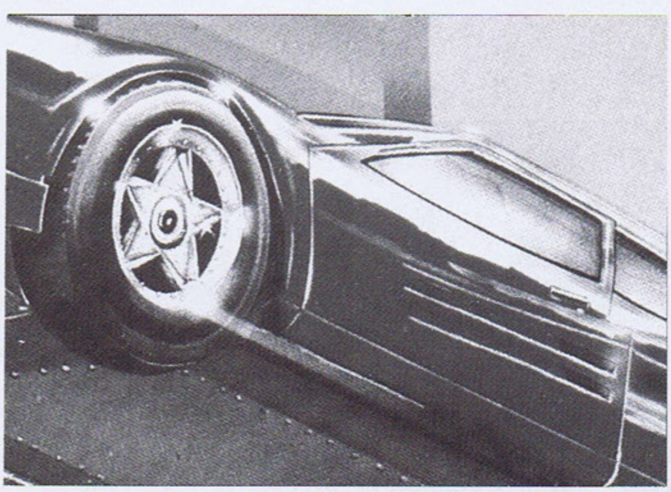
In the North Western part of the Castle is the room of maps. Near this room there is an area which you can enter with the Brass Key, which contains several chests. Raid these for the Emerald Key, the Copper Key and the Unicorn Horn.

Go back to the Rivercrest

HARD DRIVIN'

As mentioned in last month's review, this race game has quite a few strange "features". This one allows you to qualify for the head-to-head race against the Phantom Photon with ease.

At the start, turn the car around 180 degrees. The display should display the WRONG DIRECTION message. Head off under the bridge until you get to a split in the road. Take the right hand branch and keep going until you reach a checkpoint. Go through and turn the car through 180 degrees until you're heading the other way. Go back through the checkpoint in the right direction and you should hear a



ping. Keep going to the finish and once under the bridge let the clock run down to zero. You should now get a message telling you that you've qualified for the race.

Another quirk is that if you select manual gear control and start the game as normal, you can get to top speed, shift into neutral (N) and carry on around the track at full pelt. There are a few extra details though. For one you don't get any score, but a bonus is that you can't skid!

James Powell
Swansea
and Steven Kipping
Macclesfield, Cheshire

Tomb and unlock the Emerald Door. Then find the Wand of Power, which will increase your hit points by 200 each time. However it is limited, so use it carefully. Return to Redstone Castle to collect the Orb and then visit Mesron - BEFORE you give the Orb to Morle. He will then make you a scout, so you can use the maps in the Redstone Castle Map-room.

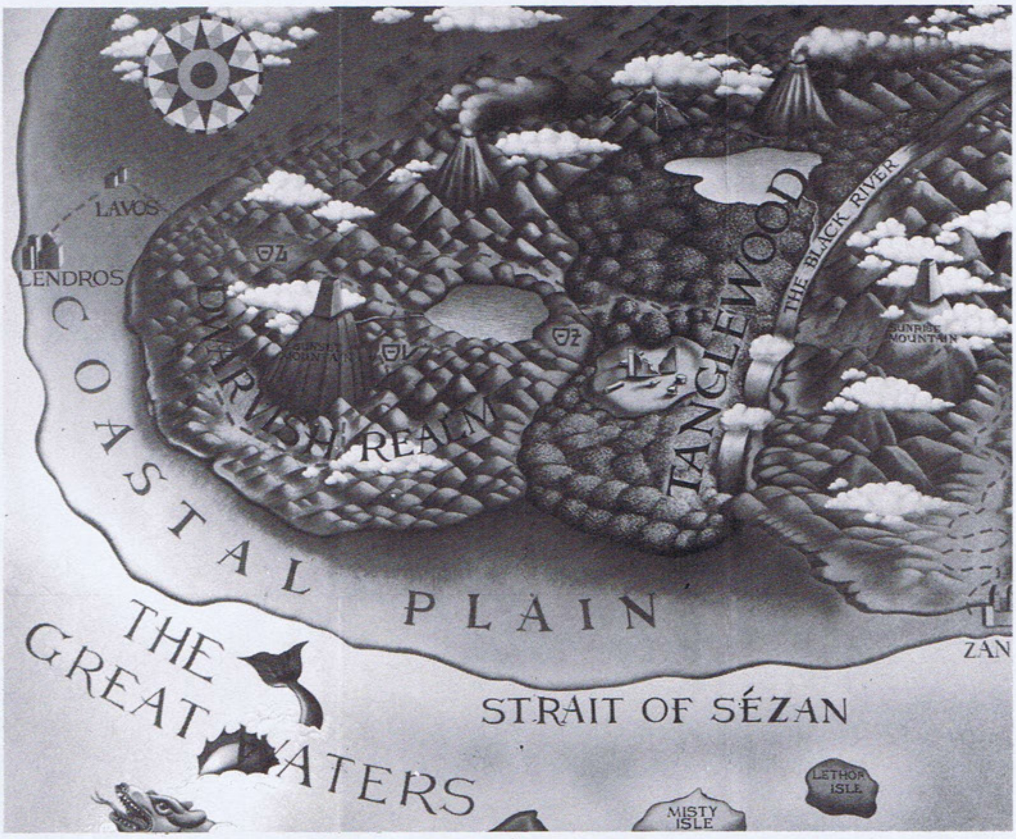
Stock up with the Bread of Life, then visit the Holy One in Rivercrest Cathedral (you must be carrying the Moonstone Amulet) and give him the Chalice of Arvyl. Keep returning until you have 99 Bread of Life, which will give you 100 Hit Points each time. Stock up on everything else and then visit Morle, who will teleport you to the Realm of Sorcerers.

Find the fortress and raid it for its keys. Probe the depths of the Dungeon and make your way out, taking two keys with you. Go to Twilight Cathedral and enter the Tomb. Visit King Kelfar in the Fortress and accept his gift. Simon the Stooge is also in the Fortress, so visit him and allow him to use his spell on you.

Visit Mesron in the Hall of Visions, who will then tell you a town is under attack. It is too late to do anything for the town so don't bother visiting it. Speak to Mesron again and he will tell you that Seacrest is under attack. Go to Seacrest and fire a spell at Mantor (he's the figure in red). Visit Mesron and he will make you a Knight. Hit points can now have a maximum of 65535.

Visit the Dungeon of Dispair and use the Black Key to unlock the door. Make your way into the depths of the Dungeon to the Concave below Level Eight. Don't attemp to rescue Morle or kill Mantor (when you find him). Instead, get inside the circle and cast the Destruct spell from the Evil Book of Magic. And (to coin a phrase) "Thu-thu-thu-that's all folks!"

Graham Stephenson
Workington, Cumbria



JOURNEY

Ooops! Apology time! It seems that we didn't quite get the right solution out to you dear readers in the December issue.

If you are following the solution, then you should find that when Hurth is bitten by the snake, it says "Split up. Bergen return, Praxis return..." whereas Praxis should proceed until he falls over the tree stump. Then you should cast Tremar (not Lightning or Blaze, they should be kept for later), then it's Dawn, back stream and so on. After examining the walls you should Proceed, Left, Left, UP and left – not just three lefts as the solution said.



After the elves part (part 3) when you open the door with "Lorem", it's Back twice not once. Also, after taking the Road to Ruin, it says to go "Down. Mix Reagent with fire. Use Mix on stones. Back. Courtyard. Cast flare, rain or lightning." At this point you should only cast rain, otherwise when you get to the mine you won't have any glowpowder left. The solution then says to Proceed once, but you should Proceed three times.

After getting the axe and returning to the old geezer, he still isn't happy and unhelpfully goes ahead and commits Hari-Kiri again, so any more help would be appreciated at this point. Does anyone know what to do next?

M Harvey
Southweld, Suffolk

RALLY CROSS CHALLENGE

Here is a cheat for Anco's amusing little race game. On the fifth track (Loco-Motion), drive around the track until just before the wooden level crossing. Now turn the car 90 degrees and drive along the railway tracks at full speed. When you reach the end of the tracks the race will end and the option page will appear, giving you 28 race and tune-up points as well as a variety of medals.

Howard Pull
Colchester, Essex

PRISON

If you've bought this game from Krisalis and are being sent stir crazy, then follow these tips for the discerning escapee.

1. Standing next to an object to pick it up isn't good enough - you have to be right in front of it.
2. The red light to the right of and below pocket one will light up when you enter a screen where there is something hidden.
3. A very important point – SAVE THE GAME REGULARLY!
4. Search packing cases AFTER killing the droids.
5. In the room containing the booby-trap, search the unit to the left of the one that explodes. Here you will find a detonating device. Pull the RED wire to disarm it.
6. Search the unit to the RIGHT to find the explosives.
7. Drop the explosives on the rubble blocking the door, remembering to get out of the way!
8. Jump two mines and one hole to find the room containing the stooge.
9. Trade the Jewel found under the bed for a vending token.
10. Wear a tie and go to the nightclub to find a plank.
11. Place the plank on the edge of the large hole and jump the gap.
12. Put the token in the vending machine, choose INNER CITY as the destination and take the ticket. Now give the ticket to the guard.
13. Find Plug Two and take it up the first lift to open the door. Get Plug Three to open the locked door on the first level.
14. Take an object and wonder around the park until you meet a stooge.
15. Go to the agreed place at

the correct time while carrying another object and swap it for the combination. Enter the Vault and collect the credit.

16. Go South-West from the Bank and search near the dustbin.

17. Go past the teleport to find something useful.

18. Take it to the secretary and insert it. I know it sounds rude, but that's what you do!

19. Go up in the lifts and search there. Use the credit to teleport to the next section.

20. Find the Vibe-o-Mat and the Fuel. Arm it and drop it near the row of mines. Now take the right-hand lift in the building and search there.

21. Find the room with a grille placed in the left hand wall. Fill the Torch with fuel. Light the Torch and burn away the Grille.

You will now be in Part Two of the game.

That's all for the moment I'm afraid. If anyone can get further let us know.

Ben Cowdell
Cirencester, Gloucestershire

KICK OFF EXTRA TIME

Like the odd kick-about, do you? Can't hit the broad side of a barn though? Never mind, just play KICK OFF and practice. Oh, and there's no need to panic if the other team gets a penalty. Just switch on the autofire on your joystick and the goalie will save the ball every time. This also works for the practice penalties.

One more thing, even if you kick the ball wide when in practice mode, you can collect the ball and kick it in the net for the goal to count.

Robert Walker
Finchingfield, Essex



INFESTATION COVER DEMO

Here's a feature of the January demo disk even WE didn't know about. To get into a STARGLIDER 2 "Painting with Rolf" type demo mode, start the demo and press '-' on the keypad. You can now use the following keypad keys to affect the picture:

. – Change colour of object
6 – Increase shape distance
3 – Decrease shape distance
2 – Increase shape number by 10 (hex)
1 – Decrease shape number by 10 (hex)
5 – Go to next shape
4 – Go to last shape
7 – Gives object position
8 – Gives object structure
- – goes back to first shape

The following keys also have an effect on the picture:

Z – Decrease roll
X – Increase roll
Right Shift – Increase "con" (?)
Right Alt – Decrease "con"
Help – pauses animation
Cursor keys – Pitch and Yaw
Space – toggle background colour

Unfortunately, there is no way to get back to the original demo as far as we can tell, so it's the old C-A-A.

Paul Crowder,
Woking, Surrey

DOGS OF WAR

To become invincible in this strange COMMANDO clone, type in TIMBO while playing, then press F5. The enemies' bullets will no longer harm you.

Ralph Headley
Macclesfield, Cheshire

STORMLORD

To get further in this pretty arcade adventure, simply type DRAGONBRIDGE on the credit screen. A scrolly message should now say "You cheating swine". Start the game and press SPACE to pause. Now all you have to do is press L to skip a level.

Shaun Easton,
Plymouth, Devon

HELTER SKELTER

Not a very widely-known game this, but a very addictive one, so if you're lucky enough to own a copy and can't find the secret codes then here is a list of them:

Level 11 - SPIN
Level 21 - FLIP
Level 31 - BALL
Level 41 - GOAL
Level 51 - LEFT
Level 61 - TWIN
Level 71 - PLAY

Ralph Headley
Macclesfield, Cheshire

EASY MONEY!

Life needn't be so tough you know, in fact it can be positively glorious at times – just ask S. N. Hardy, Graham Stephenson and Ben Cowdell, they've each managed to scoop themselves £50 worth of software, simply by sending in some tips.

Don't let everyone else get the cream, send in your maps, tips and pokes to: GAMEBUSTERS, AMIGA FORMAT, 30, MONMOUTH ST, BATH BA1 2AP and you too could be walking out of your local software shop with your pockets



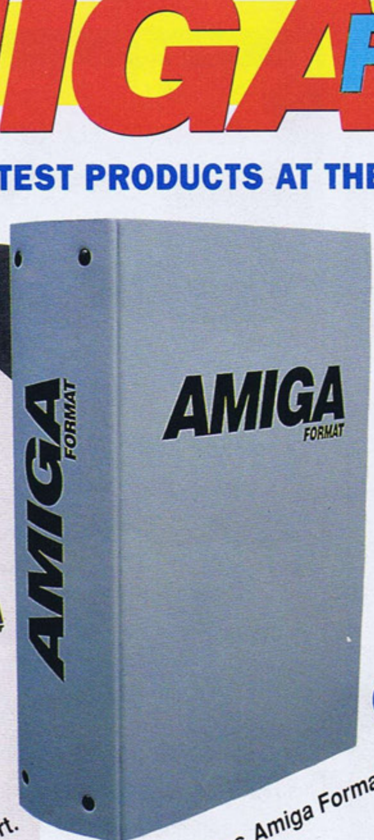
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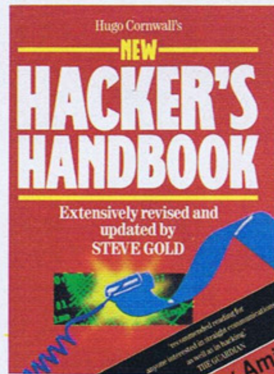
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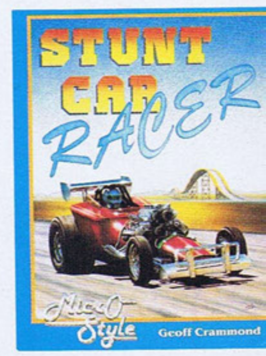
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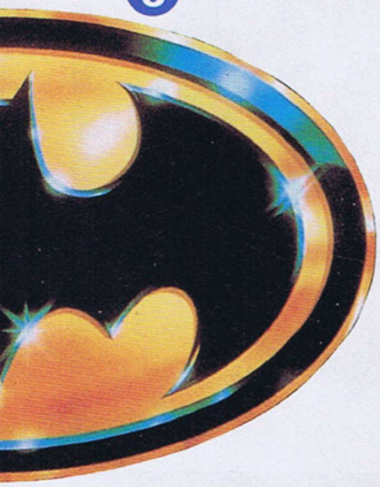
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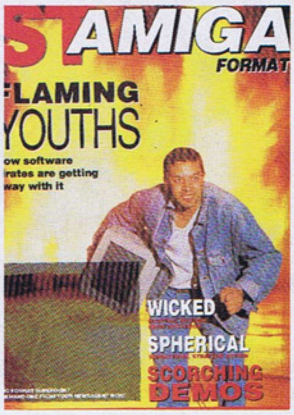
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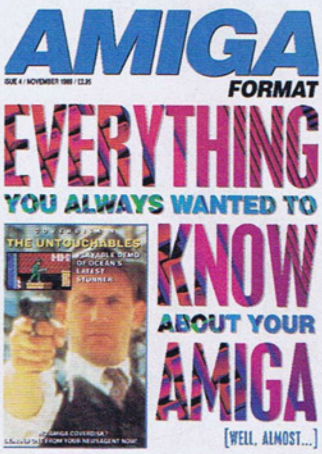
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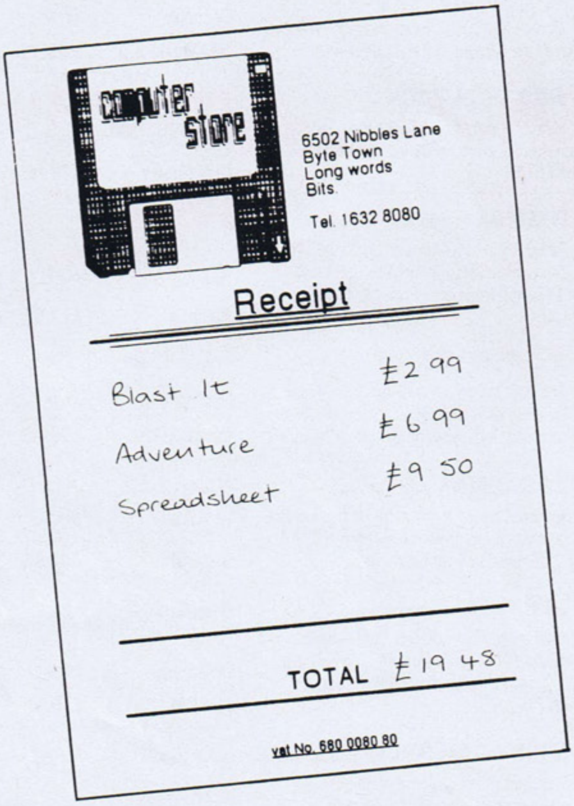
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WORKBENCH

If techno jargon is the disease, Workbench is the cure. Armed to the teeth with his hardware reference manual and a steady flow of coffee, **JASON HOLBORN** goes jargon bustin' on all things from samplers to printers, *DPaint* to crashes.

SAMPLE CITY

I am new to the Amiga 500 and need some help with choosing the right sound sampler. Which would you recommend? Secondly, what is the largest sample possible? Lastly, if I upgraded my Amiga to 1 Mb, could I capture larger samples? Any help would be gratefully received.

P Brown
Doncaster

If you need a sound sampler, you won't go far wrong with the Master Sound *sampler reviewed elsewhere within this issue. On a standard A500 with 512k, the largest samples you'll probably be able to grab will be about 260k in size, the rest is used by the sampling software itself – obviously this is dependent on how much memory the sampling software uses up.*

Some older samplers will only sample into chip RAM, so unless you're lucky enough to have the new 1 Mb Agnus, your samples will never be greater than about 450k (regardless of how much expansion RAM you have). However, if you have a sampler such as Future Sound *or* Master Sound, *you'll be able to sample directly into Fast RAM, therefore allowing you to grab samples to completely fill the maximum amount of RAM you have installed within your machine.*

MUSIC, MAESTRO PLEASE

I would like to know what programs are available for the Amiga in the style of the Archimedes program *Maestro*. This program, if you haven't seen it, allows the user to use either the keyboard or mouse to input music onto a traditional score which is displayed onscreen. Are there any such programs available within the PD libraries?

R Coxon
Derby

No PD program of that type exists, but you could treat yourself to either Electronic Art's Deluxe Music *or Aegis'* Sonix *package. Both will allow you to input notes onto an onscreen score.* Sonix *is favoured by many and is extremely easy to use, but* Deluxe Music *is far more powerful.*

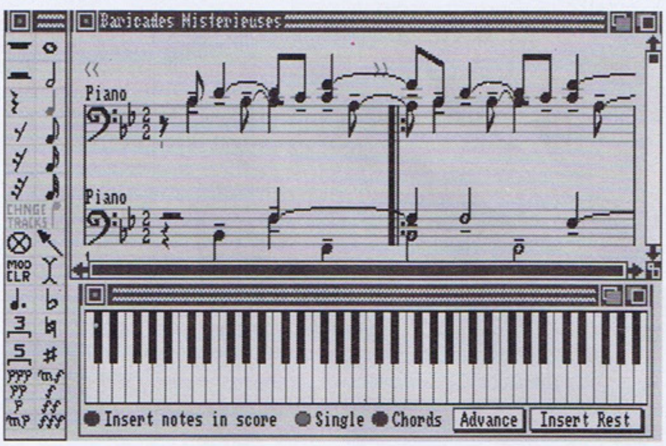
PRINTER PROBLEM-PROMPTLY POSED

I have recently bought an Amiga 500. I would like to know if the printer that I already own is compatible with my new machine. The printer in question is an Amstrad DMP2000 with a serial interface.

What software, if any, will I need to make the printer work? I believe the printer is Epson compatible.

P Chappel
Mexborough

You're in luck, the Amstrad should work without problems. Just pop down to your local computer store and purchase a serial lead, plug it in and you'll be fine. The Amiga will have to be told to print to the serial interface, so use the Preferences program on your Workbench disk to change the output port from the parallel port (the default setting) to serial. Next, just install the EpsonX printer driver and you're ready for action.



***Deluxe Music* in action. Just pick up a note and paste it onto the score using the mouse.**



Confused by samplers? Read 'Sample City' for help.

NEW DIRECTION

Being blunt and straight to the point, is there anyway to 'call up' a directory into a wordprocessor (I've got *Kind Words*) or Ed (that funny little thing on the Workbench disk)? In the introductory manual it says you can but all I get is the error message '...IS A DIRECTORY AND CANNOT BE EDITED'. Are there any PD programs that will allow me to print directories? Help!

G Sayer
Dagenham

Your letter was a little unclear, but I think I understand what you want to do. If you need to print out a listing of the contents of a particular directory (or include it within a document that you're working on within your wordprocessor), what you must first do is to obtain the directory listing using the CLI command 'DIR'. Using output redirection, it is possible to send the output from DIR to a text file. If you typed DIR > DF0:DIRTEXT SYS: OPT A, a textfile called 'DIRTEXT' would be written to the disk in the internal drive. This file will contain an ASCII listing of the entire contents of your boot disk. If you then type 'COPY RAM:DIRTEXT TO PRT:', the listing will then be printed.

KNOBY WRITES

Please, please, please help. How can I change the shape of the Workbench 'Snooze' mouse pointer that appears every time the Amiga accesses the disk? I HATE it! How can I change it?

I am also interested in learning Assembly language. Could you advise me on a suitable assembler to start with. Also, which books would you recommend to help me learn both the Amiga hardware and instruction set?

R 'Knoby' Swift
Godalming

There is no way to redefine the snooze pointer through the Workbench. However, as we speak, a colleague of mine is working on a little utility to carry out the task. Expect to (hopefully) see it on the coverdisk very soon!

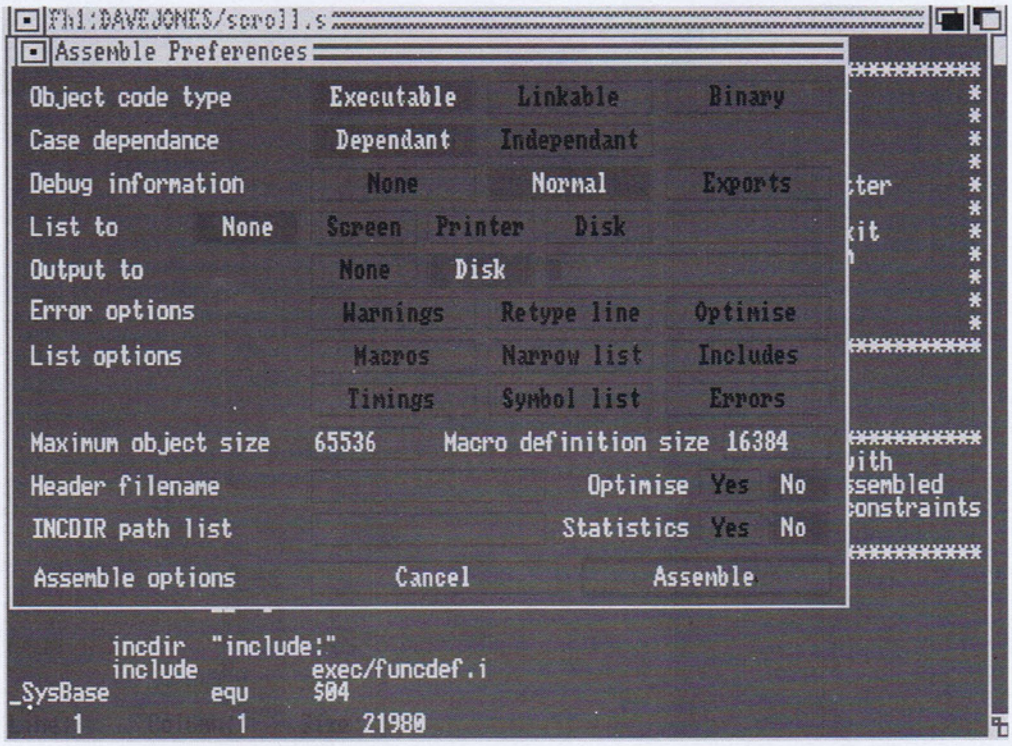
You basically have two choices where assemblers are concerned – HiSoft's Devpac or Argonaut's ArgAsm. If you're just staring out with assembly language, then Devpac 2 is a better bet because it includes a completely integrated monitor/debugger, which is almost as important as the assembler itself. ArgAsm is the choice if you already know assembler language very well and you intend working on large projects. A good book to teach you assembly language is Abacus' imaginatively named 'Amiga Assembly Language Programming'. To teach you about t he Amiga hardware, the one book you must have is Addison-Wesley's 'Amiga Hardware Reference Manual'.

PUTTING YOU OUT OF YOUR MISERY

So you've got a problem with your Amiga, eh? Want to be put out of your misery? If the answer is 'yes', then you've got two options. The first is to commit Seppuku with a sharpened mouse. The second is to write down your problem and send it into the Workbench Helpline – it's your choice, but I assure you that the second is considerably less painful!

If you're feeling perplexed by processors, flummoxed by for-next loops, dumbfounded by disk drives, then relieve your misery by sending your letters to the following address:

WORKBENCH HELPLINE,
AMIGA FORMAT,
30 MONMOUTH STREET,
BATH BA1 2AP.



At last, those of you who wanted to play with the ArgAsm demo on issue six's coverdisk can with our tip 'Accessing ArgAsm'.

DPAINT HELP

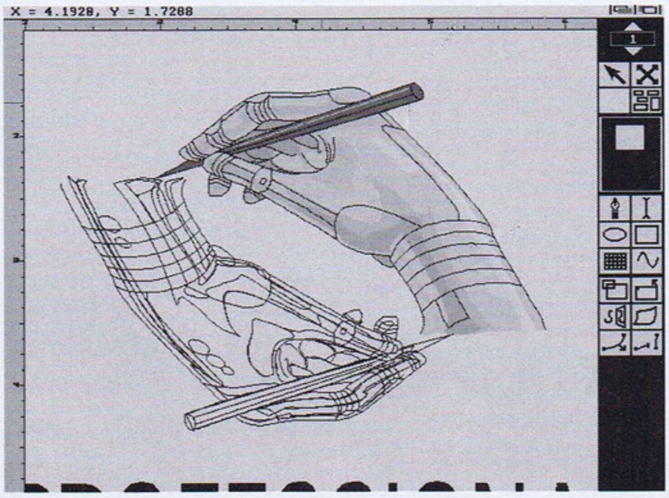
When working with *DPaint II* and I want to resize my brush, I seem to always run into problems. I use *DPaint* to produce outline drawings, but when I wish to increase the size of a line that I have picked up as a brush, instead of just increasing the length of the line, *DPaint* also increases the thickness and makes the brush look 'jaggie'. When I decrease the size of an outline, *DPaint* loses pixels altogether.

As I mostly work with outline drawings, it is crucial that I am able to resize any outline. Is there a solution to this problem within *DPaint* itself, or do I need to buy another package? I never used to have this problem on my old Macintosh!

J Olsen Bournemouth

What you actually need is a totally different package altogether, called a 'structured drawing' package. These packages work on the principle of points and vectors, which (without becoming too technical) allows any 'object' (lines, boxes, circles etc) to be resized, stretched etc, without affecting the thickness of the line. These packages are used extensively with areas such as CAD and DTP. DPaint, *on the other hand, is pixel-based.*

Instead of going back to your Macintosh, why not check out a package called Professional Draw *which will more than fulfil your needs. The program is available from HB Marketing on 0895 444433.*



Structured drawing packages allow lines to be resized without introducing either 'jaggies' or increasing the thickness of a line.

ACCESSING ARGASM

Oops, we made a bit of a booboo on issue six's coverdisk. Many of you who tried to run the *ArgAsm* demo may have been wondering where the CLI icon popped off to – according to the documentation, it should have been in the same directory as the *ArgAsm* demo itself!

To access the *ArgAsm* demo (if you haven't already sussed out how to get around the problem), you'll first have to boot your machine with Workbench (not from the coverdisk). Once the Workbench screen appears, double click on the Workbench icon and then double click on the System drawer to open it. Once the window appears, double click on the 'CLI' icon and the command line interface will appear. Next, type CD ? and press RETURN. After a second or so, a line will appear on the screen saying DIR:. Now, remove your Workbench disk and insert our coverdisk and type DF0:ArgAsm and press RETURN. You will now be in the *ArgAsm* directory. To run the demo, just type *ArgAsm* and you're away.

R Monteiro
Bath, Avon

MEMORY MATTERS

I have just bought an Amiga 500 and wish to upgrade it to 1 Mb of RAM. I was all set to buy one when I read about the new ECS upgrade in your news pages that offers a megabyte of chip RAM. Should I wait for ECS?

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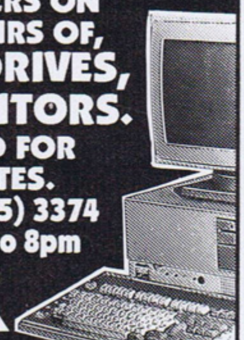
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Buying a RAM expansion that is not manufactured by Commodore will not invalidate your warranty. Finally, Commodore's A501 lives in the little hatch that can be found underneath your A500, hence it is an internal RAM expansion.

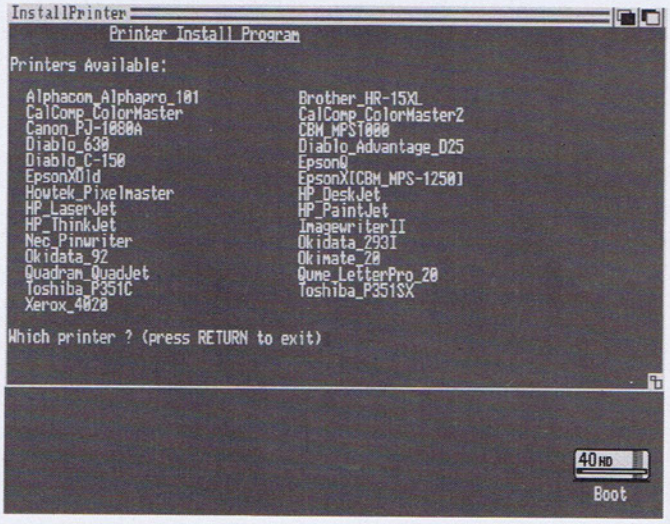
LIFE THE UNIVERSE AND PRINTER DRIVERS

Life with Workbench 1.2 was a joy for printer owners – if you needed to install a printer, all you needed to do was to load 'Preferences', enter the 'Install Menu' screen, select the printer you required and that was it – all the printer drivers you required were immediately accessible. However, Workbench 1.3 is a different beast altogether. Although the mechanics of installing a printer are almost identical, Commodore (in their infinite wisdom) decided that it would be a jolly good thing to remove the printer drivers and put them on the Extras disk instead, making them totally inaccessible to Preferences. What are you to do?

The answer lies in a little utility that Commodore so thoughtfully provide called 'InstallPrinter' which (surprise, surprise) is used to transfer the printer driver you require from the Extras disk to your Workbench disk.

The InstallPrinter utility is simple to use. First of all, double click on its icon and a window will appear displaying a list of the printer drivers available on the Extras disk (if you only have a single drive, you will be prompted to insert your Extras disk). Simply decide upon which printer driver you require (EpsonX for Epson's etc) and then enter the name of the driver using the keyboard. When you press RETURN, InstallPrinter will then copy the printer driver from your Extras disk to the DEVS:Printers directory of your current boot disk. Once InstallPrinter has finished, load up Preferences and then install the printer as the manual details.

J Taylor
Daventry



If everything is going ok, the Install Printer program should look a little like this.

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COPING WITH FAILURE (Part 2)

We always keep our word on Amiga Format, and just to prove it, here's the second and final instalment of the 'AmigaDOS error codes explained' feature that we started last month. But I didn't buy last month's issue, though! I hear you shout. What am I to do?. Well matey, you can jolly well go out and buy a back issue.

219 seek failure

Another programmer problem. The program that caused the error paused incorrect parameters to the AmigaDOS Seek() function. Contact the manufacturer and tell them immediately!

220 comment too big

My, don't we waffle on! The filenote that you have tried to attach to a file is greater than 80 characters long. The solution to this problem is, like most, beautifully simple – just cut down the size of your filenote.

221 disk full

The disk (Hard or floppy) that you are trying to write to has run out of disk space. If you get this error when trying to copy files to the RAM disk, then you've run out of memory.

222 file is protected from deletion

Files can be protected against deletion by setting the relevant flag using the AmigaDOS Protect command. To make the file deletable, enter Protect <Filename> D and then delete the file using the AmigaDOS Delete command.

223 file is write protected
224 file is read protected

If you get either of these error messages, then I'll be very impressed – because they shouldn't appear in the current release of Kickstart. These two error messages are put in for 'future expansion'.

225 not a valid DOS disk

This disk you have just tried to access is either totally corrupted, or it hasn't been formatted (or it's not an Amiga disk at all – are you sure it doesn't belong to your Mac, PC or ST?).

226 no disk in drive

There isn't a disk in the drive that the Amiga can access. So why not put one in?

232 no more entries in directory

No, you haven't tried to write more files to a disk than AmigaDOS can handle (that's practically impossible!). This error is actually caused by a bug in the program you are trying to use. ■

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BACK TO BASICS

After a period of silence, BASIC programmers are treated to a couple of new products to further enhance their Amiga programming. JASON HOLBORN checks out the *GFA BASIC Compiler* and HiSoft's *Extend*.

Over the years, BASIC has earned itself (rather unfairly) a bad reputation amongst professional programmers – it's slow, encourages sloppy programming and isn't at all 'hip'. Is Basic really a programming language fit only for novices?

Of course it's not! – don't listen to a word of it – Basic is still a powerful language that can hold its head up high with those other 'trendy' languages such as C, OCCAM and Assembler (assembler has always been an 'in' language). Within the 'professional' corporate computer industry of high-end PC, mainframe and mini computers, Basic still remains a popular choice for producing applications quickly and easily.

Amiga Basics

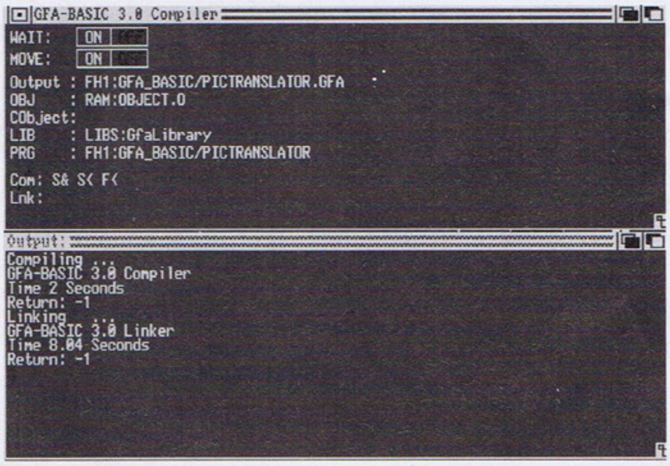
When the Amiga was originally launched, software was thin on the ground. What was available usually consisted of straight port-overs from other systems, which was the case with the Amiga's original Basic interpreter system. This original Basic was not the *AmigaBasic* Interpreter that we have come to know and love, but a creaky affair called *ABasiC*, written by Metacomco. Although *ABasiC* worked (you'll probably find quite a few of the older PD games were written using it), it was a rather unfriendly beast at the best of times. Realising how dire it was, Commodore commissioned MicroSoft to produce an Amiga version of their popular Macintosh Basic system.

Although *AmigaBasic* is now the industry standard, this hasn't stopped third party developers producing alternatives to the interpreter supplied. Over the past couple of years, five alternative Basic systems have been released for the Amiga, but by far the most popular of them all must be GFA and HiSoft Basic.

GFA UPDATE

When GFA SystemTechnik of Germany (then handled by Microdeal, but now under the control of their own UK operation) originally launched the Amiga version of their hugely successful *ST Basic* language, the reception that awaited it was surprisingly cool. Although *GFA Basic 3* was undoubtedly a fast and powerful implementation of Basic, early releases suffered from two major problems – bugs and the lack of a compiler.

After solving the first of these problems with the release of 3.041 of *GFA Basic* (you have upgraded, haven't you?), GFA Data Media (UK) have finally turned *GFA Basic* into what is arguably one of the fastest and most powerful implementations of Basic on the Amiga with the release of the *GFA Basic Compiler*.



Configuring the GFA compiler is simplicity. If the option you require can't be found within the menus, then just modify the compiler shell by loading it into your GFA interpreter!

The GFA Basic Compiler

It's been a long time coming, but finally GFA have delivered the one program that GFA users have been crying out for. For a little more than the price of the average game, *GFA Basic* can be taken far beyond the levels of performance that were accessible from the interpreter alone.

The compiler takes a standard *GFA Basic* program and then compiles and links it into a stand-alone program which can be executed independently from both the compiler and the *GFA Basic* interpreter. Because *GFA Basic* programs are stored in a tokenised form, you'll need to own the interpreter if you wish to write and compile your own programs – you could just buy the compiler, but you'll be restricted to compiling other peoples source code. The compiler will therefore not take GFA programs stored in ASCII format. If you do prefer to use a separate text editor (such as *Cygnus Ed*) in preference to the GFA editor, then your programs will have to first be converted to a tokenised form (using the GFA Interpreter) before they can be compiled.

The compiler consists of three programs – the CLI-based GFA Compiler, the GFA Linker (which is surprisingly GFA's own, and not BLink, as used by everyone else), and a menu shell designed to allow operation of both the compiler and linker from within an easy to use, Intuition-based front end.

BENCHMARKS CORNER

Enough of the techno-waffles, here's the hard facts that clearly demonstrate the performance of *GFA Basic* against its nearest rival, *HiSoft Basic*. All the times quoted below are in seconds.

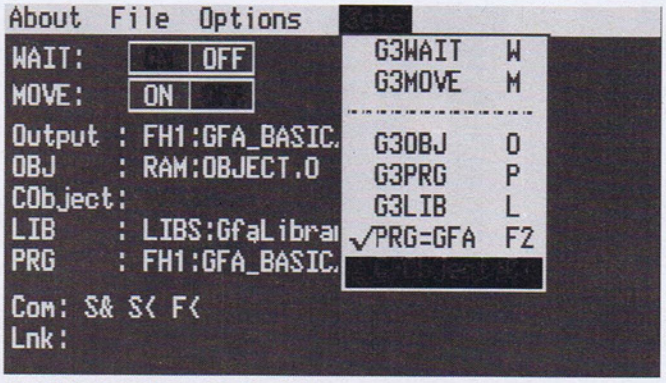
Benchmark	GFA (Int)	GFA (Compiled)	AmigaBasic (Int)	HiSoft Basic (Compiled)
10000 Square Root Calculations	7	5	36	12
Byte Copy 50k file held in RAM	36	21	229	348(!)
Print 10000 chars to screen	23	21	37	34
Loop 100000 times	7	4	41	12

As well as these three programs, the compiler system also requires access to a GFA Library that is used by the linker to produce the final executable code.

Operating The Compiler
Using the compiler from the GFA Shell is simplicity itself. Once the GFA Shell is loaded, all you must do is to tell the compiler the filename of your GFA source file and then press <F10> – the shell will then automatically call both the compiler and linker. If everything compiled and linked ok, your compiled program will be written out to disk. Who said compilers and linkers were complicated beasts?

Although the shell seems to be a fairly simple affair, most compilation options are controllable from within its pull down menus. Even so, if you do think there is an option that is missing from the shell, you can easily add it yourself – the Shell is written in *GFA Basic* and GFA kindly include the source code as a tokenised file that can be loaded directly into the GFA Interpreter.

For the purists among you who still think that the Workbench is for softies, both the Compiler and Linker can be executed from the CLI by simply passing the appropriate parameters. In some cases, it is often necessary to use the Linker from the CLI, even though you would normally use the GFA Shell. For example, the linker allows programs written in C to be linked with GFA code. As long as your C Compiler can output object files in Metacomco format (the standard format), the GFA Linker should take it without problems.



The *GFA Compiler* doing its stuff

COMPILERS EXPLAINED

Although Basic is deemed a 'computer programming language', the language itself is as foreign to the computer as binary is to a human. For the Amiga to understand what a program wants it to do, each line of Basic must be translated into the computer's native language, machine code. Even a language such as assembly is gobbledygook to your Amiga until it is translated into machine code using an assembler such as *Devpac* or *ArgAsm*.

A Basic interpreter takes each line as it is to be executed, translates it into machine code and then runs it. Once the line has been executed, the interpreter then forgets the translated line and moves onto the next. Every time a line is to be executed (within a loop, for example), this process must take place. This basically means that if you have a loop that is performed 100 times, the interpreter converts each line within the loop to machine 100 times! As you can probably appreciate, this process is rather wasteful of time.

What a compiler does is to translate the entire program into machine code so that the computer does not have to carry out the time consuming task of translation during program execution – the processor can be left to run the actual machine code version of your program. In theory, this should result in a significant improvement in program performance.

Conclusion
If you already own *GFA Basic*, then you'd be insane to ignore the *GFA Compiler*. If you have ever had doubts about purchasing *GFA Basic* but have still to buy yourself a replacement Basic system, then the combination of the Basic Interpreter and Compiler should be at the top of your list. Although two separate packages have to be purchased to pull together a complete GFA programming environment, the total price works out at about the same level as HiSoft's system.

Compiled programs are both compact and fast in execution. Everyone knows that Interpreted GFA is fast, but compiled GFA is blisteringly fast – rivalling languages such as C and Modula 2 with ease. At last, *GFA Basic* has come of age.

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EXTENDING YOUR REACH

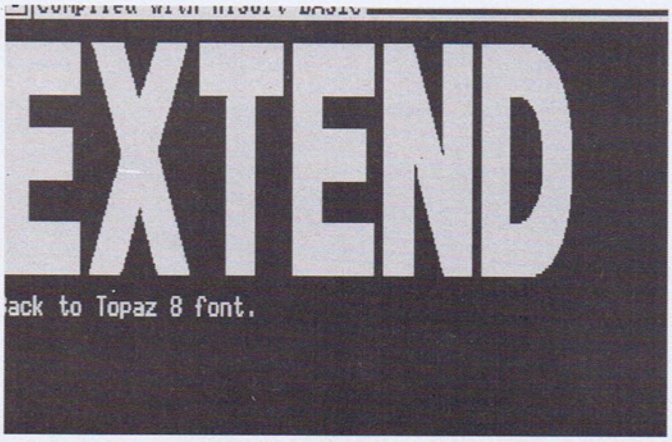
When HiSoft originally released their *Basic Compiler* system, they proved that you don't need to scrap all your old *AmigaBasic* code just because you're using an alternative Basic. Not only could you happily compile all your old *AmigaBasic* programs, but *HiSoft Basic* even included a couple of new commands to further enhance your Basic programming.

However, even HiSoft admit that their Basic isn't perfect. Because of time constraints when the original compiler was released, many of the enhancements that HiSoft hoped to include were left out. For starters, there's no IFF support, no standard file requester (although you can use the one built into the ARP library) and virtually no support for Intuition gadgets. What are we to do? Buy *Extend* of course!

Extend is a disk-based library of routines written by SunSmile Software in the States that are designed to enhance your Basic programs beyond belief. The package consists of the library file itself, the *HiSoft* and *AmigaBasic* '.bmap' file (used to tell Basic how to pass parameters) and a large number of source code examples designed to show of the *Extend* library in action. Before they can be used, both the extend library and the extend bmap file must be copied to the LIBS: directory of your boot disk.

How Many Commands?
The *Extend* library contains 72 new commands that can be directly called from your *HiSoft Basic* programs. Although *Extend* is badged for use with HiSoft's system, it will also happily work with *AmigaBasic*.

The extra commands offered by *Extend* cover a wide range of different areas that were previously not addressed by either HiSoft or *AmigaBasic*. These extra commands mainly cover loading and saving screens in IFF format, loading and playing sampled sounds, but the vast majority are designed to provide *AmigaBasic* programs with improved control over Intuition and AmigaDOS.



Bored of the standard Topaz font? With Extend, you can change the font with ease.

Intuition Addition
Intuition was never particularly well supported within *AmigaBasic* – ok, so you could open windows, screens and menus, but that was as far as it went. Even these three facilities weren't particularly well implemented.

Even though *AmigaBasic* supports Intuition menus, control is rather limited. *Extend* takes Intuition menus that bit further by allowing you to define both sub menus and hot keys (Left Amiga key plus Q etc).

By far the most major areas of Intuition now covered by *Extend* are the gadgets and requesters. To say that gadget and requester support within *AmigaBasic* was rather limited would be an understatement – both HiSoft and *AmigaBasic* totally ignore them both!

The current version of *Extend* allows you to set up both Boolean and String gadgets with considerably less hassle than C programmers have to suffer. Surprisingly, one of the most useful gadget

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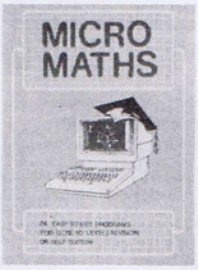
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types are not supported – proportional gadgets. Once your gadgets have been set up, *Extend* provides a whole host of extra commands to aid gadget management.

Requesters are also particularly well catered for within *Extend*. Both string requesters and the more common Boolean requesters can be set up with a single command. The big let down of requester support is the file requester supplied – it really is atrocious. If you do require a file requester, you're probably better off with the one supplied within ARP – not only is it easier to use, but it is now the unofficial Amiga standard.

IFF Support

Although *AmigaBasic* can be eventually talked into accepting IFF files, the process is a painful one. Anyone who has used the 'SaveILBM' source code on the Extras disk will no doubt be alarmed at the size of the code. With *Extend* however, screens can be loaded and saved in IFF format with a single command! Regardless of the format of the screen, be it 4 or 64 colours, NTSC or PAL, the *Extend* IFF commands will handle them with ease.

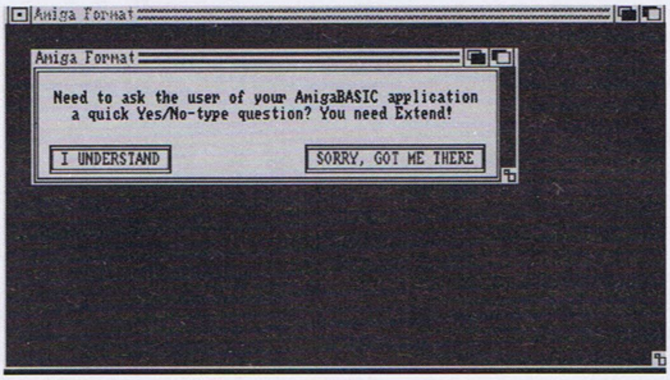
The one area of IFF screen handling that *Extend* does not cope with particularly well is HAM format pictures. Although *Extend* will load and display a HAM picture, this is as far as it goes. Surprisingly, *Extend* will not allow you to actually use the HAM picture – once the picture is loaded, clicking the 'close gadget' to close the screen is about as interactive as things get.

Legal Matters

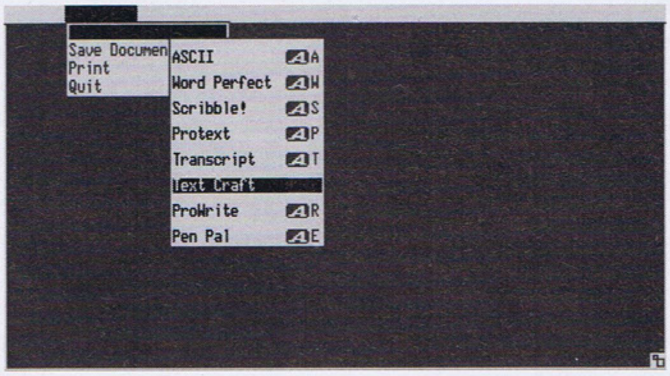
Once you've written your application that takes advantage of *Extend*, you'll no doubt want to share the fruits of your labours with your friends.

If you've compiled your program using *HiSoft Basic*, this is no problem as HiSoft allow the *Extend* library to be freely distributed. However, HiSoft do not allow you to distribute the *Extend* '.bmap' file that is needed by *AmigaBasic* – if you do, then you'll be breaking HiSoft's licence agreement and you can expect rapped knuckles when HiSoft eventually catch up with you.

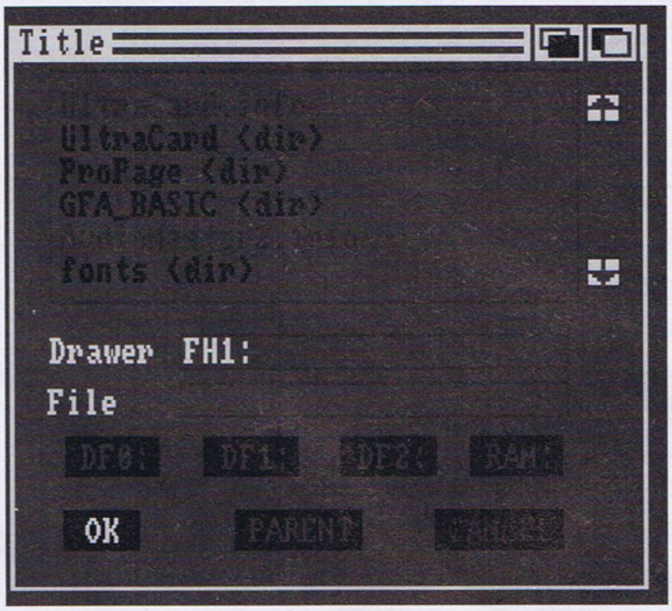
While *HiSoft Basic* owners will be saying 'big deal, I don't need it once my program has been compiled', *AmigaBasic* users will require this file to be present every time your program is run. If you do use *AmigaBasic* and want to take advantage of *Extend*, isn't it time you thought about upgrading to *HiSoft Basic*?



Requesters are simple to use with Extend!



Sub Menus within Menus – try doing that within AmigaBASIC!



Ok, so it's not the best file requester in the world, but it's better than nowt!

Conclusion

HiSoft themselves admit that the *Extend* library contains routines that should have been in *HiSoft Basic* in the first place. The good news is that HiSoft are working on a major update to their Basic that will have the *Extend* library routines built into it. The bad news is that this isn't due until at least the end of the year, so don't hold your breath.

Extend is worth buying just to gain the sheer speed and convenience of the IFF commands – the fact that the library also includes about 70 extra commands makes it even greater value. If you're a *HiSoft Basic* user, then *Extend* is an invaluable addition to your software collection which will make the task of programming the Amiga considerably easier.

For *AmigaBasic* owners, the choice to buy is a little less certain – if you do buy *Extend*, then any programs you produce to use the library will be confined to your own personal use. But for adding a truly professional look and feel to your *AmigaBasic* programs, *Extend* is a well worth considering. For the price, it's invaluable. ■

HiSoft Extend
£19.95 ■ All Amigas ■
HiSoft 0525 718181

EXTEND FEATURE SUMMARY

So what exactly does HiSoft's *Extend* library really have to offer? Here's a quick run down of the areas that it covers, to enhance your Basic programming.

IFF PICTURES **– Load and save pictures in IFF format with a single command. If you're not sure of the picture's format, *Extend* will automatically open a screen of the appropriate type. Display a HAM picture. Manipulate individual bit planes, load and save planes in binary format.**

SAMPLED SOUND **– Ever wanted to include sampled music/sound effects within your Basic programs? Well now you can. *Extend* allows control over which channel the sound is played through, the volume and playback rate.**

FONTS **– Change the font used within your Basic programs without having to mess about with ROM Kernal routines. *Extend*'s font commands will also allow you to change the style of text with ease.**

GADGETS **– Define and manage Intuition gadgets with ease. At last your *AmigaBasic* programs will have that true Amiga feel to them. Set up both Boolean and String gadgets, define the position relative to their parent window, highlighting type etc.**

REQUESTERS **– Need a file requester? *Extend* has it. Need to prompt the user for an input but don't want to mess up your screenful of pretty graphics? *Extend* does the job.**

MENUS **– Define both sub menus and menu 'hot keys'. Bored with the way menus are highlighted? Let *Extend* customise your application's menu system.**

O/S SUPPORT **– Run external programs from within *AmigaBasic* using a single command. Find out information about both the system and any disks currently mounted to the system. Allocate and deallocate memory legally, specifying both the amount required and memory type (fast, chip, public).**

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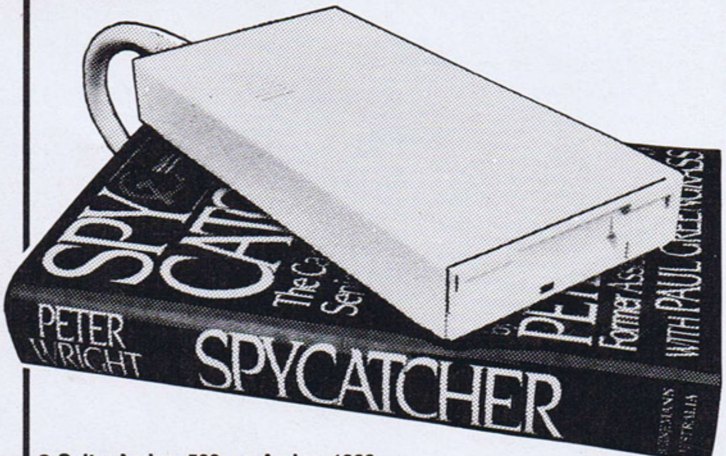
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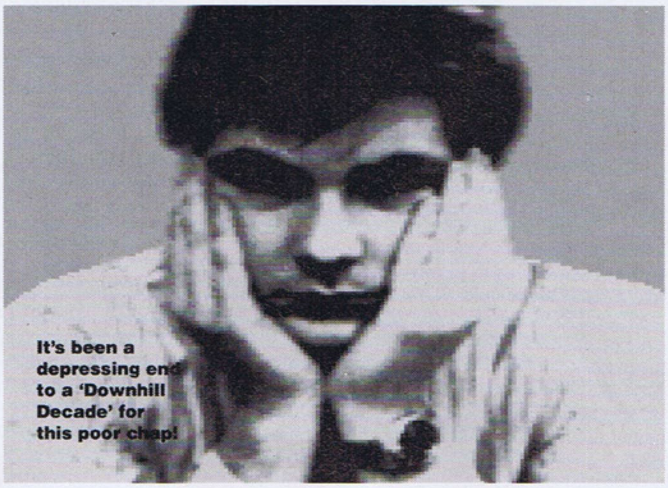
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DOWNHILL DECADE

I've been in on the computer revolution from nearly the beginning just under ten years ago, and now I'm a little fed up. Sure, I still enjoy using the machines, and their spin-offs like CD players, videos, toasters (who can enjoy using a toaster?), etcetera, but life doesn't seem to be what it was at the beginning. Some people think that at 24 going on 25 I'm past the age when I should be using computers or, as some people put it, "playing with those things that destroy your mind!" I'm sure every computer user has heard that at least once from their parents, guardians and sometimes even friends, and perhaps it is that phrase that is making me fed up.



It's been a depressing end to a 'Downhill Decade' for this poor chap!

I'm fed up enough to actually begin to de-technologise myself. Yes, I know that sounds painful but I really have had enough. I got rid of my Psion Organiser recently, and the 'yuppie' label that went with it, and now I'm thinking of dispensing with my PC (which is a faithful old chum), and converting completely to the Amiga which sits quietly on the next table.

However, there is something in my mind that is even fed up with my Amiga. I'm not sure why, but I feel that I haven't achieved much with it. Strangely, that's the feeling I've had every time I've needed to change computers, or is it that I'm fed up with the software companies churning out the same old drivel as always? There doesn't seem to be a lot of 'original' software on the market at the moment, just licences and arcade conversions, of which there are only a few good ones.

What happened to the originality of the first years of computing where nearly every game broke the boundaries of the computing field; where a game like *Elite* could be marketed without the fear of being out sold by *After the Ninja XXIII*, or shoot-em-up after shoot-em-up after shoot-em-up? It's got to the stage where the utilities (like *Deluxe Paint III*) are actually more fun to use than the games. True, the 16-bit market has allowed some originality to happen. I mean, where would *Starglider II* be without the 16-bitters, or *Interphase* (my current favourite). I will admit to liking *Batman the Movie* and *New Zealand Story* which happens to be a favourite arcade game of mine, and a pretty good conversion too, but I'd much prefer an innovative 3-D game like *The Sentinel*.

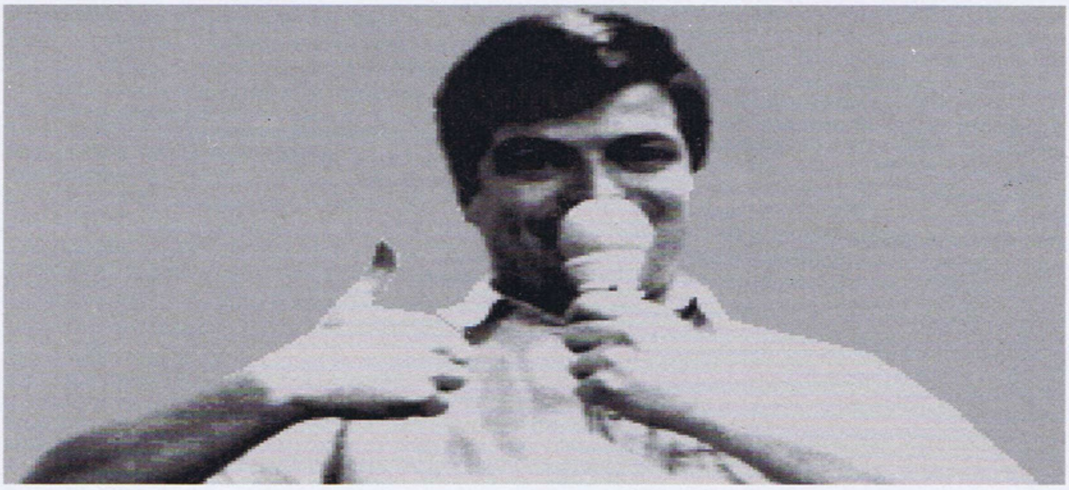
So why won't the software industry return to the heady days when someone could get away with marketing an original game and do well. I suppose that money governs that one. The only company that seems to push originality with quality is Electronic Arts. It was brave of them to release a game like *Populous*, which is original in its concept and dares to make games last longer than a mere five minutes.

So why doesn't the software industry take EA's example and push originality with quality, instead of conversions of arcade games that many people haven't seen in this country and which are usually utter crap or based on martial arts? Is there no originality within the software industry? Well, if there isn't I believe that they will soon find some very unhappy customers. I hope that any company that dares to push an original game onto the market does well with it, even though it may essentially be a shoot-em-up.

The software industry has actually begun to give computers a bad name, so why won't they listen to complaints? An example of this was a quote from someone who I helped to set up her new Amiga. Her children started playing *Batman the Movie* and she eventually said "Well, what is the point of this game, and all the shoot-em-ups?" I had to defend *Batman*, which is admittedly cashing in on the success of the movie (which I enjoyed but no-one else did), but I found I couldn't defend the shoot-em-ups, or the beat-em-ups, or the 'kick the hell out the poor sods' type games. I used the examples of *Elite*, *Starglider II* and *Carrier Command* to defend the software industry, but then I thought "Why should I?", because she's right – what is the point to many of these games except to promote mindless violence?

I'm sure that the original concept of the home computer was to find a tool to help learning within the home, but what can you learn from blasting aliens or beating the hell out of someone. At least games like *The Sentinel* and *Interphase* teach you to survive by using your wits and not always ▶

Can you tell the difference between a vanilla ice-cream and a vanilla A500? If so, the leadership of the Conservative Party could be yours! See 'Vanilla Wibble'.



your weapons. So what is your opinion and what do the members of the software industry have to say for themselves?

Jon Gigney
Chelmsford, Essex

PPS Get the software companies to listen to a track from Janet Jackson's Rhythm Nation 1814, called "Living in a World (They Didn't Make)" – it says it all.

I don't think the situation is quite as depressing as you make out. The software houses certainly do produce too many unoriginal games, but people keep buying them. If everyone stops buying shoot-em-ups they will stop producing them. I think the situation has improved in the last year and the success of games like Populous *will encourage more software houses to try to emulate it by producing more varied software.*

VANILLA WIBBLE

1. What is: a) wibbling? (as in "Jason's wibbling")
b) a dongle?
c) a vanilla A500? (sounds tasty)
2. How much internal RAM can the A500 look after and what is the total that it can handle?

Please can we have page numbers on every page. It makes it so much easier to find the place you want to get to. And how about a sort of colour coding to determine between music, graphics, coverdisk etc. I'm sure this would save a lot of people a lot of hair.

David Baker

1. a) Wibbling is what the whole Amiga Format *team does best.*
b) A dongle is a piece of hardware that plugs into a computer, usually for software protection.
c) It's an A500 that tastes of vanilla of course.
2. Officially you can get 1 meg internally but some boards manage two. Externally you can add on up to 8 meg.

NO IMMUNITY

Let me first introduce myself as a fairly practised computer user and secondly a fairly new Amiga user (only two months) and thirdly a very pissed off virus receiver. In a way, a virus is one of those "it will never happen to me" phenomena, but it did.

First of all it wiped out 10 blank disks, my original WB 1.3 and then took over my *Deluxe Paint II*, which was what really pissed me off. The people who write these viruses are real mindless idiots and make a lot of misery which could be avoided. I'm thinking of getting a virus killer to eliminate it, so is *Virus X 3.2* any good? And can I get the virus out of the system forever?

Hopefully I can get the software replaced, but that is not really the point. The point I'm making is that it's going to take a long time to return and get the software replaced and check for viruses in the future, and continually checking, which is quite time consuming, while these ******** who put in the viruses are laughing their heads off at what they've created. IT'S SICK.

Just one more question concerning viruses. Is the virus actually present in the hardware, or only on the software? Can I run a word processor with the printer safely? I'm asking because when I was dumping a screen from *Deluxe Paint II* to my printer I had a read/write error and the next thing I knew the disk was corrupted.

S Smith
Tonbridge, Kent

Viruses can only exist in software – on floppy or hard disks. If you turn off at the plug before switching disks the virus cannot copy itself. If it gets onto a hard disk it is more of a problem and will have to be forcibly evicted or it will trash every disk you use.

Virus X 3.2 *is a good virus killer and is available as public domain software. There is also a new update called* Virus X 4.0 *that copes with even more infections.*

THE BEST 50 OF THE DECADE...

My top 50 pieces of software of the decade are...

1. *Elite* – Firebird
2. *Starglider/Starglider II* – Rainbird
3. *Interphase* – Imageworks/Mirrorsoft
4. *Batman the Movie* – Ocean
5. *ATF* – Digital Integration
6. *Tetris* – Mirrorsoft
7. *The Sentinel* – Firebird
8. *Archipelagos* – Logotron
9. *New Zealand Story* – Ocean
10. *Batman* – Ocean (the isometric 3D game)
11. *Grand Monster Slam* – Golden Goblins
12. *Deflektor* – Gremlin
13. *Knight Lore* – Ultimate
14. *Mortville Manor* – Lankhor
15. *Deluxe Paint III* – Electronic Arts
16. *Wordstar 4* – Micropro
17. *Wizball* – Ocean
18. *Driller* – Incentive
19. *Dark Side* – Incentive
20. *Total Eclipse* – Incentive
21. *Obliterator* – Psygnosis
22. *Hitchhiker's Guide to the Galaxy* – Infocom
23. *Beyond Zork* – Infocom
24. *3D Pool* – Firebird
25. *TLL* – Vortex
26. *F18 Interceptor* – Electronic Arts
27. *Rebelstar* – Firebird
28. *Populous* – Electronic Arts
29. *Feud* – Mastertronic
30. *Magic Knight Trilogy* – MAD
31. *Psion Chess* – Psion
32. *Colossus Chess X* – CDS
33. *Shoot-em-up Construction Kit* – Outlaw
34. *Rocket Ranger* – Cinemaware/Mirrorsoft
35. *Three Stooges* – Cinemaware/Mirrorsoft
36. *Bio Challenge* – Delphine
37. *Leaderboard* – Access
38. *Space MAX* – Final Frontier
39. *The Pawn* – Rainbird
40. *Guild of Thieves* – Rainbird
41. *Passing Shot* – Imageworks/Mirrorsoft
42. *Virus* – Firebird
43. *Whirligig* – Firebird
44. *Carrier Command* – Rainbird
45. *UMS* – Rainbird
46. *Balance of Power 1990* – Mindscape
47. *Nebulus* – Hewson
48. *Koronis Rift* – Lucasfilm
49. *Starstrike* – Realtime
50. *Star Ray* – Logotron

Jon Gigney
Chelmsford, Essex

I like your idea for the best software of the decade: judging from the list you've had several computers but show a distinct bias towards games. I would like to see other peoples' lists of the best software of the '80s, but keep them to a top 10 and let's not just have games.

PACKING THEM IN

I own a 1 meg Amiga but I don't take the Michael out of the Atari ST. I used to own an ST until I saw the Amiga, which I bought the next day and got rid of the ST.

Yes, technically the Amiga is a far superior machine but you must stop to realize that the ST, apart from being cheaper anyway, offers much better value for money in the form of the Power Pack. I am the assistant manager in a computer shop and have worked with computers for four years, so I know.

The Amiga Batman Pack may be a good idea, and yes it out sells the ST 20-1, but it just can't stand up to the ST's pack. The Batman pack has only about £150 worth of software with it and they forgot the joystick. Whereas the ▸

ST pack has £500 worth of software and a joystick.

Now, don't take me wrong, personally I think the ST is a total lemon, but I'd like to see Commodore get even remotely close to a pack that good. They have the Class of the 90's pack, but that's too expensive at £580.

Lorne Smith
Bexhill-on-Sea, E Sussex

If the Amiga outsells the ST by 20-1 then obviously nobody is particularly influenced by the quantity of software in the Power Pack. The Amiga Batman pack is good value for money and is recognised as such. This shouldn't be a competition to see who can squeeze the most games into a bundle: it's about quality not quantity.

INQUISITIVE MIND

I think your magazine is brilliant. I have a few questions to ask.
1. In the Issue 5 demo of *Ghostbusters II* I got the first part of the scoop but I couldn't find the other two parts. Are they in the demo?
2. Is there a conversion of *Dinosaur Isle in 1930*?
3. In Issue 5 I saw three Abacus books on Amiga 3D Graphics, Amiga C for Advanced Programmers and Amiga Graphics Inside & Out, is there one on icons?
4. Is there a follow up to *Robocop*?
5. I like *Virus*. Are there any other games like it?

James Snowden
Chesterfield, Derbyshire

1. No, the other two parts are not in the demo.
2. Don't know – does anyone else?
3. No.
4. Yes, but there is no release date set for it as yet.
5. Unfortunately, no. It would be nice to have a few, wouldn't it?

AND WHY NOT

Firstly a quick crawl and fawn – terrific mag, fab, well-balanced, excellent, mega, rubbery!

Secondly I hope you can furnish me with some info. I read with great interest in *Empire* magazine of an American program called *The Collaborator* which was designed to effectively screentest scripts for movie writers. *Empire* produced no information in its article about which software house the program was produced by, which formats the program was available on or even if it was yet available in this country. The article was a bit of a tease, to say the least.

Please can you help a struggling writer to turn his Amiga into a Barry Norman lookalike! Keep up the good work. And why not?

Simon Cooper
Lymington, Hants

I'm afraid it's the first we've heard of The Collaborator *– if anyone out there knows something about it please do let us know.*

COME BACK DEVPAC

Could you please put *Devpac* on your Coverdisk again as first time round I was an ST owner. So when I came to my senses and sold the ST, all my *ST/Amiga Format* disks went too. I reckon it was only for *Devpac* on the Coverdisk that your readership became so great that you could afford to split into two mags anyway (the mag is amazing though).

If there is no chance of this could you tell me if I could get that back issue. Think of it though... if you also included an instructions on programming bit each month your sales would quadruple! Hi-Soft would make a bomb too as we would all upgrade to *Devpac 2*.

Could you also tell me why you don't use a compactor on your disks, I do every month and save loads of space.

Neil Smith
Llanfaes, Powys

There are still a few back issues of ST/Amiga Format *Issue 10 available with the* Devpac *disk on – contact our Somerton office to get hold of one.*

PRAISE AND CRAZE

I have some praises and crazes. Firstly some praises. *Future Wars* ...WOW... Congratulations Delphine, a marvellous piece of programming, the further you get in the game the better the animated sequences, brilliant. Any more games like this in the pipeline?

Praise No 2 – Cinemaware. Nice job on *It Came From the Desert*. Pity it's only 1 meg though, only the select few will be able to see the brilliant graphics involved – a superb opening sequence. Can't wait to see the next one.

Now the crazes, the things that make you go Aaaaaaagh... and all that.

Are Commodore going to start bundling a decent mouse with their packages? You see mine is dead, won't work, defunct, kaput. He runs around OK, he puts the arrow where I want it, but when I tweak the little fellow's ears – nothing, not even a click. On closer inspection I found the leaf contacts were black.

These things are silver plated. A few years ago some bod discovered that silver has better conductivity than copper, so everything became silver plated – hi-fi jack sockets, micro switches etc. But what old bod didn't take into account was that silver... tarnishes, and when you get a film of tarnish, no more contact. If you try to clean the contacts in your mouse, before you know it you have worn through them and you are now rubbing your bare finger up and down the emery paper. Enter the dead mouse. What is wrong with the carbon and silicon type of contact that is used in digital watches?

Craze No 2. Fissionchip. Remember the game *Krystal of Kanos*? I find it difficult to complete the game because of the crappy fast load system used. I sometimes get three screens at once or the one I have just left. I even got a screen full of red-headed pirates. It looked like one of those that game designers use when animating characters.

You see, Fissionchip, most of us forked out £400 on our Amigas to get decent graphic adventures, so make it worthwhile eh? Don't release the game if it isn't going to work properly. And no, there isn't anything wrong with my system because even my software dealer has stopped stocking the game because of returns. Same goes for *Kult*. Stop releasing junk – it doesn't work on 1.3 machines. I returned the game to my dealers and we still haven't heard anything and that was in August. Have you got any ideas, *Format* team?

Michael Harvey
Southwold, Suffolk

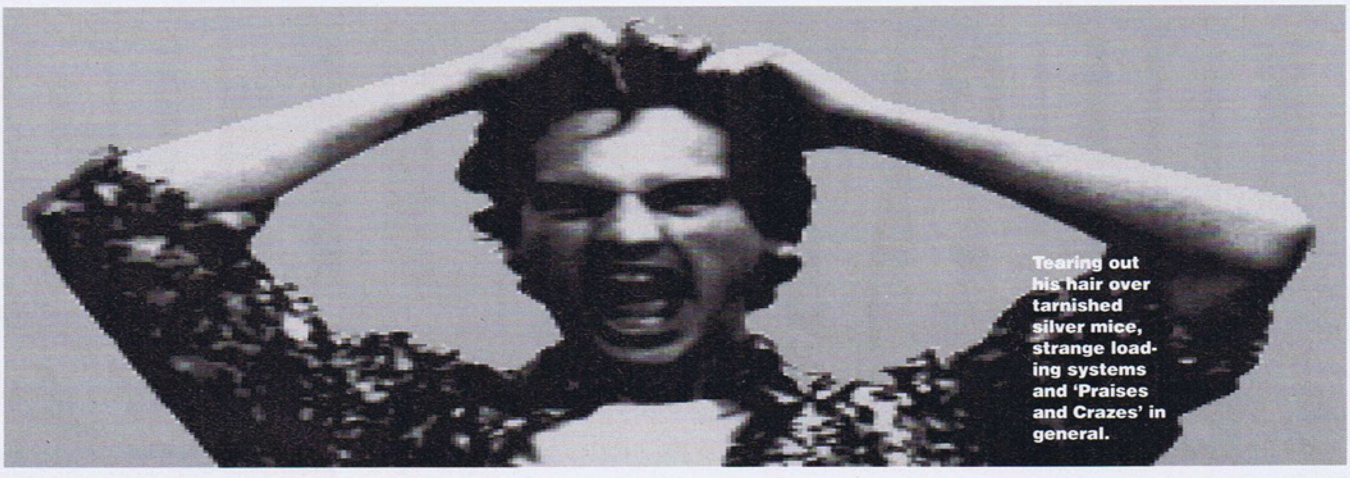
Mice wear out like anything else – there are replacements available, notably the Naksha mouse reviewed last issue and the Boing mouse reviewed in Issue 5.

There's certainly no excuse for releasing bugged software, but incompatibility problems are tougher to deal with – getting the most out of the Amiga and sticking to the compatibility rules isn't always possible.

WHOSE DOMAIN?

Remember the original version of Kirsten Orbarski's excellent *Soundtracker* program. I bought this program, but since then I've got hold of many other hackers' versions that are much better. I know that these probably used some of the original code, but can these be classed as PD or shareware? They may have one or two bugs in them but they are far superior to the original.

I now use this program extensively for music but a few of my friends want copies of the ▶



Tearing out his hair over tarnished silver mice, strange loading systems and 'Praises and Crazes' in general.

program. I'm not going to let them have a copy unless I'm sure it's PD or shareware.

Lorne Smith
Bexhill-on-Sea, E Sussex

Although the Hackers will claim that their versions of Sound Tracker *are rewritten from scratch, and that no code from the original is used whatsoever (which is most probably the case),* Sound Tracker *(in all its incarnations) still remains on dodgy ground. Legally,* Sound Tracker *is still a commercial product that cannot be distributed in the same way as PD software, therefore most PD suppliers will not touch it with a barge pole. This is undoubtedly a great shame as* Sound Tracker *is an excellent program that is used extensively for the production of music tracks within both demos and even commercial games software. We even recently heard a rumour that a well known games software house was actually employing a very well known cracker just to make changes to the version of* Sound Tracker *they were using. Try instead the PD programs* Game Music Creator *or* Sound Monitor.

COLOURFUL WIFE

I feel compelled to write so other readers may appreciate how helpful their wives can be when everything is not going to plan.

My husband has just bought a Star LC10 colour printer for his Amiga. He spent days using every combination possible, trying to do a graphic screen dump.

I decided to read his recently delivered Jan 1990 issue of *Amiga Format* – the article 'Mystery Tour'. I asked him if he had been in the system drawer and Initialised the printer. I'll never forget that look on his face. He now spends many an hour printing colour pictures of Garfield, spaceships and tigers.

The lesson to be learnt is, even though the wife might think a workbench is found in the garage and shell is a type of petrol, she can already read *Amiga Format* or his instruction book while the husband uses trial and error.

Mrs I Burns
Spennymoor, Co Durham

PS My husband has just had his 40th birthday and life with his colour printer has made him young again.

I've heard of many things making someone feel young again, but never a colour printer. It just goes to show that the Amiga is a computer for all ages and sexes. Oh, and are females better readers?

INFECTED, DEJECTED

Your Coverdisk with last month's *Amiga Format* had some interesting stuff on it, eg Gamebusters, WB Hacks, *PPrefs* etc. So imagine my happiness when I booted it up to find all that good stuff on it. I decided however to check it with my *Virus Killer 3.1*. Imagine my disgust when I checked it and found a North Star virus on it.

I thought – it can't be a virus, I've always known *Amiga Format* was a reliable magazine. I then thought of if I had played any games beforehand. The bad news was that I had and it's destroyed two-thirds of my collection.

It sickens me to see a good coverdisk packed with good utilities and (sometimes) a good game demo, but with a virus on it. As I found it I had no alternative but to kill it. It ruined most of my disk. Then I found a non-standard boot code on another one of your disks and had to kill that as well.

I know you claim that most of your programs are virus free but this is out of the question. Either put a stop to these viruses and non-standard boot codes or I won't get your magazine any more.

Lee Anderson
Nelson, Lancs

Your letter isn't too clear about the order in which things occurred. It is almost certain that the virus came from one of your disks and not the Coverdisk. Issue 6 carried the usual boot-block that states that the disk is virus free. If that message doesn't appear when you boot up then the boot-block has been altered. Our boot-block is non-standard but don't use a virus killer on it unless the 'virus free' message fails to appear when the disk is booted up. NB: the message appears when you boot up from the Coverdisk and not when you boot up from a Workbench disk and then load the Coverdisk.

The Coverdisk master is always checked for viruses before it goes to our duplicators and it is virtually impossible that the Coverdisk could get a virus between leaving our offices and reaching your computer.

PIRATES AND PROTECTION

This piracy thing. Personally I think that anyone who makes a profit out of pinching some poor sod's hard work should be shot, or at least put away forever. These scumbags are destroying the industry and if they don't stop then we are going to be stuck with some very expensive doorstops. On the other hand there are some good points to note.

The pirates' distribution network is bigger, better and faster than the software houses' so why bother to fight them with these clever copy protection things that never work in the end anyway? I've seen loads of pirated games and I'm sure you have too, that work better than the original. One to note is *Xenon II*. The original only worked on a few Amigas due to the copy protection and was on two disks, whereas the pirated version worked on all Amigas and was only on one disk.

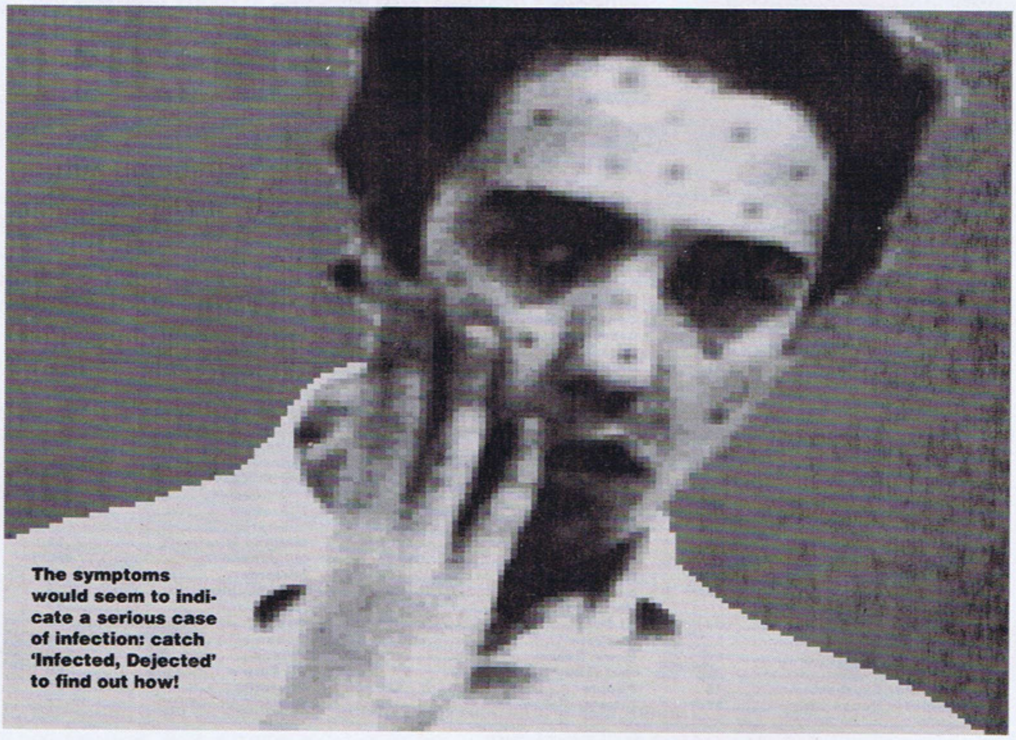
I admit that they must have some protection on their disks, but what's wrong with the key disk technique? This worked very well as it allows you to make a backup copy for your own use, yet requires the original disk to work.

One to note on this is *Deluxe Music Construction Set*. I've seen copier programs that claim to copy this and even have parameters for it, but they never seem to work. Seems to be pretty good protection to me. Even better, why not use a counter technique as used on PCs. This allows you to make a certain number of copies then no more, unless you un-install a copy. Both of these methods also allow you to copy the software onto a hard disk, something quite a few people would like.

Also, this manual protection, not a bad idea but it just doesn't work. If I see a game that uses this method then I just don't buy it. Pure and simple as that. There's nothing more annoying than having to find a word in a manual, especially if, like me, you're always losing them anyway. Besides, it takes a pirate about half an hour to cut this out as well.

Lorne Smith
Bexhill-on-sea, E Sussex

We don't see "loads of pirated games" – we don't see any, because we want nothing to do with them or the pirates that produce them. Copy protection is never going to stop the determined pirate, though it does help restrict the casual copier. As I've said before in these pages, the difficulty of the problem doesn't mean we should give up. Pirates don't have a moral or legal argument to justify their actions, they are thieves, pure and simple. ■



The symptoms would seem to indicate a serious case of infection: catch 'Infected, Dejected' to find out how!

GURU's MEDITATION

CHRISTMAS PUZZLE ANSWERS

My wife has hidden my Christmas present under her dress (which, by the way, is hanging up in the wardrobe). Wrapped in gold and silver foil paper, about the size of X-Cad Designer (drool), but there again it could be just a big bottle of aftershave.

Derek Boyle
Billingham, Cleveland

Well done on correctly solving the puzzle, Derek. We hope you did get X-Cad: if not and you got the smelly lotion, we calculate that it will take you 14 years 237 days, 3 weddings, 22 office parties, 72 trips to the theatre and 127 evenings in a night club to use the stuff up. Alternatively, drink it.

OH DEARY, DEARY ME

Last month proved to be another poor month for cock-ups – only two. I just don't think they're trying to make mistakes, you know – damn poor show. All they could come up with was getting some captions out of place on Pages 18-19 and failing to identify the map on Page 136 as being of Shadow of the Beast. They even got all the Previews shots numbered correctly again. They're taking all the fun out of bodge-spotting.

CAPTAIN WHINGE

...coffee machines, Cortina drivers, Barry Manilow, unoriginal games, football hooligans, push-top taps, the new can ring-pulls, ads for Whiskas, obvious wigs, poodle haircuts, the UK defence budget, losing the end of the Sellotape, musical phone holds, car drivers wearing hats, professional fouls, critics of the long-ball game, Kylie Minogue, broken photocopiers, lift music, people with three middle initials, personalised number plates, plastic spoilers, Australian soaps, losing a contact lens, broken zips, people who pick their noses at traffic lights, flares, broken paving slabs, losing shirt buttons, the penny change from things that cost £?.99, viruses, exclusives, cash machines that give out £20 notes, reviews of demos, anyone who steals my biros...



CYBERTWITS

It doesn't take much to get Mark Strachan and Dominic Wheatley of Domark to dress up in funny clothes, but that's enough about their private lives. Here we have the idiosyncratic chappies promoting their new game Cyberball by wearing lots of padding and trying to look mean. Sorry chaps, but such charming, likeable guys as yourselves could never look mean and nasty – nice to have the silly pictures back though.

COMPETITION WINNERS

Here are the winners of the competitions run in the January issue.

MOONWALKER COMP – Answers 1)c, 2)b, 3)b; WINNER (Discman, CD's, T-shirt and game): M Taiwo, Fixby: RUNNERS-UP (T-shirt, badge and game): R Nicol, Hatfield; M Cozens, Dymchurch; Steven Hendry, Trentham; CJ Holt, Hough; Arash Shababi, Kingswood; Nicola London, Hornchurch; Andy Banwell, St George; MJ Stevenson, Hyson Green; CS Tubbs, Leek; James O'Hanlon, Peckham; Michael Morris, Bridlington; Troy Helm, Brighton; E Wilkinson, Ashington; Amar Patel, Wapping; Iain Brown, Tongham; Jason Cook, Somercotes; David Black, Kings Heath; Michael Barber, Stamshaw; J Dalby, Pontyberem; Tom Chapman, Earls Barton; Andrew Butler, Westcliff- on-sea; N Muldrew, Milton Keynes; Matthew King, Verwood; RG Davenport, Tickhill; Krisjan Robert Smith, Lymington.

HARD DRIVIN' COMP – Answers 1)a, 2)c, 3)a; WINNERS (radio controlled Ferrari):IS Brown, BFPO 43; S Edgey, Lower Woodside; Andy Grant, Kilmorack; Alan Robertson, Portslade; Nicolas Michaelides, Ealing.

TRACK COMP – Answers 1)b, 2)b, 3)c; WINNER (Superpic): Vic Storey, BFPO 40: RUNNERS-UP (Acquisition 1.3): Robert Baulk, Wheatley Hills; A Mottram, Hatton; Christian Boatswain, Swansea; Kevin Mills, Hawley; Paul Hine, North Petherton.

ACTIVISION COMP – Answers 1)c, 2)a, 3)b; WINNER (22 games): Kevin Hobden, Lincoln.

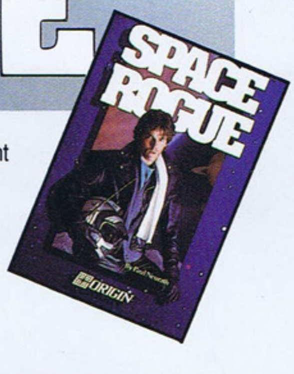
PHOTOFILE COMP – Answers 1)b, 2)a, 3)c; WINNER (Sniper camera): David Carter, Woking. The winning tie-breaker was – "I would photograph the Battle of Hastings because the original tapestry offers such a low resolution and all the perspective is wrong."

NEXT MONTH

Next month's issue, out on Thurs 8th March, will be warmly wonderful in a fluffy kind of way. It will have loads of cuddly features to bring a rosy glow to your keyboard. There's a fascinating piece on multi-media, more programming with Dave Jones, a look at scanners and a fabulously addictive Coverdisk demo.

ADVERTISER'S INDEX





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